This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

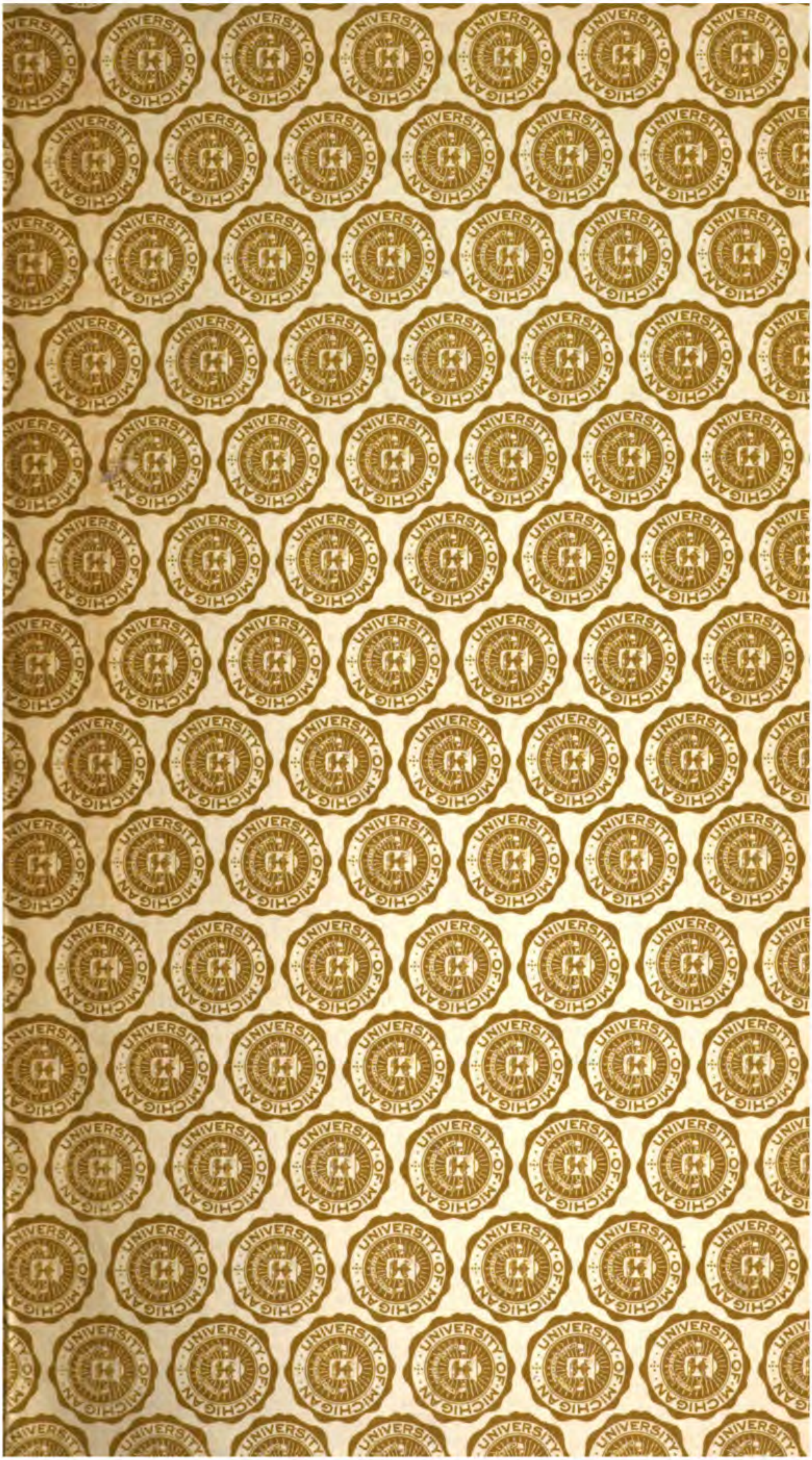
+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

LIBRARY OF THE
UNIVERSITY OF MICHIGAN

PRESENTED BY
THE PUBLISHER



AS
36
.L533

AS
36
.L533

STANFORD UNIVERSITY
PRESS

General
Leland Stanford Univ.
97.

INTRODUCTORY NOTE

The present memoir is the third part of a catalogue of the generic names applied to fishes subsequent to January 1, 1858. With the other parts it is a contribution to the stability of scientific nomenclature, the genera being listed in order of date accompanied by the indication of the type species of each.

The first part (1758 to 1833) was intended to serve as an aid to the International Commission of Zoological Nomenclature by bringing together the generic names of fishes as proposed in the formative period of classification, together with the data by which authors who failed to conform to the Linnæan system could be considered, each on his merits. I had at first no intention of continuing the series beyond 1833, but the data gathered for the first part seemed to make the compilation of the catalogue worth while.

Part II covers what I have termed the mediæval period of taxonomy—from 1833 to 1858, this completing the first century of names in ichthyology.

Part III represents the early modern period, dating from Darwin's "Origin of Species" in 1858. In this epoch most authors began to see that the fundamental basis of classification must be genetic and that the problems involved in a natural grouping are vastly more complex than appeared to the earlier authors. To paraphrase a saying of Dr. Elliott Coues, genera and species are but larger and smaller twigs of a tree which we try to arrange as nearly as possible in accordance with nature's ramifications.

This view applied to taxonomy involved an extensive subdivision of accepted genera, the genus becoming a genetic conception rather than a convenient pigeon-hole into which to throw species.

The effort to reform classification in Ichthyology was undertaken almost simultaneously by three eminent systematists, Dr. Pieter Bleeker of Java, Dr. Albert Günther of the British Museum, and Dr. Theodore Gill of the Smithsonian Institution. Of these writers Dr. Bleeker had by far the greatest experience in field work, but his use of the writings of other authors was not discriminating, and the names he chose for genera, though technically correct, were largely clumsy and tasteless. Dr. Günther had at his disposal a greater range of material than any other contemporary writer. His groupings were, however, of unequal value,

Stanford Junior Univ 1-3-23

and he was more distinctly "conservative" than either Bleeker or Gill. It has long been a sort of tradition in the British Museum that whatever is not found there probably does not exist. Dr. Gill saw more clearly than either of the other two the nature of the classification of the future. His generic names have as a rule a sound basis, the exceptions being mainly among those based on erroneous records of other writers.

In addition to the large expansion of generic names among species already known, the years between 1858 and 1880 mark great accessions of knowledge of the life of the oceanic depths, a series of discoveries due mostly to the voyages of the Challenger and the Albatross, and made known in England by Dr. Günther, and in America by Goode and Bean. To this period belong also the extensive studies of the fresh-water fishes of the United States and the marine fishes of the Eastern Pacific as conducted by Jordan and Gilbert. Most of the excellent papers of Franz Steindachner in Vienna, Léon Vaillant in Paris, Christian F. Lütken in Copenhagen, and Joseph Leidy and Edward D. Cope in Philadelphia, occur in this period.

I express again my obligations to Barton A. Bean of the United States National Museum, to Masamitsu Oshima, now Scientific Expert of the Fisheries Bureau at Taihoku, Formosa, and to Henry Weed Fowler of the Academy of Natural Sciences of Philadelphia for assistance in verifying records and in examining rare publications. Dr. Louis Hussakof of New York, Theodore D. A. Cockerell of Boulder, Colorado, Allan R. McCulloch, Edgar R. Waite, and J. Douglas Ogilby have also furnished valuable notes. I am again indebted to Mr. R. A. Nelgner of the Stanford University Press for his efforts in securing accuracy and in the preparation of the index. My obligations to Weber and de Beaufort's *Index of the Ichthyological Papers of P. Bleeker,* to Bashford Dean's *Bibliography of Fishes,* to Oliver Perry Hay's *Fossil Vertebrata of North America,* and to Arthur Smith Woodward's *Catalogue of the Fossil Fishes in the British Museum* have been great and constant.

DAVID STARR JORDAN.

STANFORD UNIVERSITY, CALIFORNIA,
August 10, 1919; Issued October 25, 1919.

THE GENERA OF FISHES

PART III

1859

638. ANDERSON (1859). *(On the Fossil Fishes and Yellow Sandstone.)* Dura Den.
JOHN ANDERSON.

Glyptolæmus (Huxley) Anderson, 63; orthotype G. KINAIRDI Huxley (fossil). A synonym of GLYPTOPOMUS Ag.

Phaneropleuron (Huxley) Anderson, 67; orthotype P. ANDERSONI Huxley (fossil).

639. BLEEKER (1859). *Over eenige vischsoorten van de zuidkust-wateren van Java.* Nat. Tijdschr. Neder.-Indie, XIX, 1859, 329-352.
PIETER BLEEKER.

Scarichthys Bleeker, 334; orthotype SCARUS NÆVIUS Blkr.

640. BLEEKER (1859). *Vischsoorten van Siam, . . . door Fr. Castelnau.* Nat. Tijdschr. Neder.-Indie, XX.
PIETER BLEEKER.

Balantiocheilos Bleeker, 102; orthotype B. MELANOPTERUS Blkr.

Morara Bleeker, 102; orthotype CYPRINUS MORAR Ham. = MORARA SIAMENSIS Blkr. A synonym of ASPIDOPARIA Heckel.

Acanthobrama, Bleeker, 102; orthotype A. SIMONI Blkr.

Pseudoxiphophorus Bleeker, 102; orthotype XIPHOPHORUS BIMACULATUS Steind.

641. BLEEKER (1859). *Conspectus systematis Cyprinorum.* Nat. Tijdschr. Neder.-Indie, XX, 421-441. (In this brief synopsis no types are indicated. These are supplied in the *Atlas,* 1863.)
PIETER BLEEKER.

Lissorhynchus Bleeker, 422; tautotype GOBIO LISSORHYNCHUS Ham. Recorded later by Bleeker as a synonym of GARRA Ham.

Diplocheilichthys Bleeker, 423; orthotype LOBSCHEILOS PLEUROTÆNIA Blkr.

Discognathichthys Bleeker, 423; orthotype probably DISCOGNATHUS RUFUS Heckel (= CYPRINUS LAMTA Ham.) (not verified). Said by Bleeker to be a synonym of GARRA Ham. = DISCOGNATHUS Heckel.

Barbichthys Bleeker, 424; orthotype B. LÆVIS Blkr.

Rohitichthys Bleeker, 424; orthotype LABEO SENEGALENSIS Cuv. & Val.

Chrysophekadion Bleeker, 424; orthotype ROHITA CHRYSOPHEKADION Blkr. = C. POLYPOROS Blkr. A synonym of MORULIUS or of LABEO.

Semiplotus Bleeker, 424; orthotype CYPRINUS SEMIPLOTUS McCl.

Opistocheilus Bleeker, 425; orthotype O. PROPIUS Blkr. = SCHIZOTHORAX PLAGIOSTOMUS Heckel. A synonym of SCHIZOTHORAX Heckel.

Pseudogobio Bleeker, 425; orthotype GOBIO ESOCINUS T. & S.

Mrigala Bleeker, 427; orthotype CYPRINUS MRIGALA Ham. = M. NINENSIS Blkr. A synonym of CIRRHINA Cuv.

Acheilognathus Bleeker, 427; orthotype A. melanogaster Blkr.

Smiliogaster Bleeker, 428; orthotype Leuciscus belangeri Cuv. & Val. A synonym of Rohtee Sykes.

Amblyrhynchichthys Bleeker, 430; orthotype Barbus truncatus Blkr.

Albulichthys Bleeker, 430; orthotype Systomus albuloides Blkr.

Tambra Bleeker, 430; orthotype Cyprinus abramioides Sykes.

Gonoproktopterus Bleeker, 430; orthotype Barbus kolus Sykes. Same as Hypselobarbus Blkr.

Hypselobarbus Bleeker, 430; orthotype H. typus Blkr.

Hemibarbus Bleeker, 431; orthotype Gobio barbus T. & S.

Rohteichthys Bleeker, 431; orthotype R. microlepis Blkr.

Pseudophoxinus Bleeker, 431; orthotype Phoxinellus zeregi Heckel.

Barbodes Bleeker, 431; orthotype Systomus belinka McCl.

Anematichthys Bleeker, 431; orthotype Barbusa apogon Kuhl.

Siaja Bleeker, 431; tautotype Capoëta siaja Blkr.

Cyclocheilichthys Bleeker, 431; orthotype C. armatus Blkr.

Pseudoculter Bleeker, 432; orthotype Culter pekinensis Basil.

Hemiculter Bleeker, 432; orthotype Culter leucinoculus Basil.

Chanodichthys Bleeker, 432; orthotype Leptocephalus mongolicus Basilewsky.

Leptobarbus Bleeker, 432; orthotype Barbus hoeveni Blkr.

Trinematichthys Bleeker, 433; orthotype Leuciscus trinema Blkr. A synonym of Luciosoma Blkr.

Amblypharyngodon Bleeker, 433; orthotype; Cyprinus mola Ham.

Hypophthalmichthys Bleeker 433; orthotype Leuciscus molitrix Cuv. & Val. Replaces Abramocephalus Steind.

Devario Bleeker 433; tautotype Perilampus devario Ham. A synonym of Danio Ham.

Thynnichthys Bleeker, 433; orthotype Leuciscus thynnoides Blkr.

Sarcocheilichthys Bleeker, 435; orthotype Leuciscus variegatus T. & S.

Pseudorasbora Bleeker, 435; orthotype Leuciscus parvus T. & S.

Rasbora Bleeker, 435; tautotype Cyprinus rasbora Ham.

Gnathopogon Bleeker, 435; orthotype Capoëta elongata T. & S. Replaces Squalidus Dybowski and Leucogobio Gthr.

Rasborichthys Bleeker, 435; orthotype Leuciscus helfrichi Blkr.

Elopichthys Bleeker, 436; orthotype Leuciscus bambusa Rich.

Shacra Bleeker, 437; tautotype Cyprinus shacra Ham.

Bendilisis Bleeker, 437; orthotype Cyprinus bendelisis Ham. A synonym of Barilius Ham.

Iaus (Heckel) Bleeker 438; a misprint for Idus.

Laubuca Bleeker, 438, tautotype Cyprinus laubuca Blkr.

Fundulichthys Bleeker, 439; orthotype Fundulus virescens T. & S.

Macrochirichthys Bleeker, 439; orthotype M. uranoscopus Blkr.

Hemixiphophorus Bleeker, 440; (type not named). A synonym of Gambusia Poey.

642. BLEEKER (1859). *(Palinurichthys.)* Enumeratio piscium archipelago Ind.

Pieter Bleeker.

Palinurichthys Bleeker, 22 (Nov., 1859); orthotype Coryphæna perciformis Mitchill. A substitute for Palinurus Dekay, preoccupied.

643. BLEEKER (1859). *(Pterichthyodes.)* Verh. Nat. Hist. Indie, VI.
PIETER BLEEKER.

Pterichthyodes Bleeker, xi; orthotype PTERICHTHYS MILLERI Ag. (fossil). Substitute for PTERICHTHYS Ag., preoccupied.

644. BLYTH (1859). *(Andamia.)* Journ. Asiat. Soc. Bengal, 1858.
EDWARD BLYTH.

Andamia Blyth, 270; orthotype A. EXPANSA Blyth.

645. FILIPPI & VERANY (1859). *Sopra alcuni pesci nuovi o poco noti del Mediterraneo.* Mem. Accad. Sci. Torino, 1859, 2. ser., XVIII.
FILIPPO DE FILIPPI; J. B. VERANY.

Navarchus Filippi & Verany, XVIII, 7; orthotype N. SULCATUS. Filippi & Verany. A synonym of PSENES Cuv. & Val.

Pteridium Filippi & Verany, XVIII, 11; orthotype OLIGOPUS ATER Risso. (Not PTERIDIUM of Scopoli). Replaced by VERATER Jordan, 1919.

646. GILL (1859). *Description of a New Generic Form of Gobiinæ from the Amazon River.* Ann. Lyc. Nat. Hist. N. Y., 1858-1862, VII, 45-48.
THEODORE NICHOLAS GILL.

Euctenogobius Gill, 45; orthotype E. BADIUS Gill.

647. GILL (1859). *Description of a New Genus of Salarianæ from the West Indies.* Proc. Acad. Nat. Sci. Phila, 1859 (1860).
THEODORE NICHOLAS GILL.

This and the papers which follow were printed in 1859 when probably extras were issued. The publication as a whole was in 1860.

Entomacrodus Gill, 168; orthotype E. NIGRICANS Gill.

648. GILL (1859). *Description of New South American Type of Siluroids, Allied to Callophysus.* Proc. Acad. Nat. Sci. Phila., 1859 (1860).
THEODORE NICHOLAS GILL.

Pimelotopis Gill, 196; orthotype P. LATERALIS Gill = CALLOPHYSUS MACROPTERUS. A synonym of CALLOPHYSUS M. & T .

649. GILL (1859). *Description of a Third Genus of Hemirhamphinæ.* Proc. Acad. Nat. Sci. Phila. (1859) 1860.
THEODORE NICHOLAS GILL.

Euleptorhamphus Gill, 156; orthotype E. BREVOORTI Gill.

650. GILL (1859). *Description of a Type of Gobioids Intermediate Between Gobinæ and Tridentigerinæ.* Proc. Acad. Nat. Sci. Phila., 1859 (1860).
THEODORE NICHOLAS GILL.

Evorthodus Gill, 195; orthotype E. BREVICEPS Gill.

651. GILL (1859). *Description of Hyporhamphus, a New Genus of Fishes Allied to Hemirhamphus Cuv.* Proc. Acad. Nat. Sci. Phila., 1859 (1860).
THEODORE NICHOLAS GILL.

Hyporhamphus Gill, 131; orthotype H. TRICUSPIDATUS Gill.

652. GILL (1859). *Description of New Generic Types of Cottoids, from the Collection of the North Pacific Exploring Expedition Under Com. John Rodgers.* Proc. Nat. Sci. Phila., 1859 (1860).
THEODORE NICHOLAS GILL.

Boreocottus Gill, 165; orthotype B. AXILLARIS Gill. A synonym of MYOXOCEPHALUS Steller.

Ceratocottus Gill, 165; orthotype COTTUS DICERAUS Pallas.

Porocottus Gill, 166; logotype P. QUADRIFILIS Gill.

653. GILL (1859). *On Dactyloscopus and Leptoscopus, Two New Genera of the Family of Uranoscopidæ.* Proc. Acad. Nat. Sci. Phila., 1859 (1860).

THEODORE NICHOLAS GILL.

Dactyloscopus Gill, 132; orthotype D. TRIDIGITATUS Gill.

Leptoscopus Gill, 133; orthotype URANOSCOPUS MACROPYGOS Rich.

654. GILL (1859). *On the Genus Callionymus of Authors.* Proc. Acad. Nat. Sci. Phila., 1859 (1860).

THEODORE NICHOLAS GILL.

Synchiropus Gill, 129; orthotype CALLIONYMUS LATERALIS Rich.

Dactylopus Gill, 130; orthotype CALLIONYMUS DACTYLOPUS Bennett = DACTYLOPUS BENNETTI Gill, not DACTYLOPUS, 1862, a genus of crustacea. Replaces VULSUS Gthr.

655. GILL (1859). *Notes on a Collection of Japanese Fishes, Made by Dr. J. Morrow.* Proc. Acad. Nat. Sci. Phila., 1859 (1860).

THEODORE NICHOLAS GILL.

Acanthogobius Gill, 145; orthotype GOBIUS FLAVIMANUS T. & S.

Rhinogobius Gill, 145; orthotype R. SIMILIS Gill.

Glossogobius Gill, 146; orthotype GOBIUS PLATYCEPHALUS Rich.

Luciogobius Gill, 146; orthotype L. GUTTATUS Gill.

656. GIRARD (1859). *Ichthyological Notices.* Proc. Acad. Nat. Sci. Phila., 1858 (1859).

CHARLES FRÉDÉRIC GIRARD.

Pterognathus Girard, 57; orthotype NEOCLINUS SATIRICUS Grd., hypothetical name, revived by Jordan & Evermann (1896).

Myrichthys Girard, 58; orthotype M. TIGRINUS Grd.

Typhlichthys Girard, 63; haplotype T. SUBTERRANEUS Grd.

Arlina Girard, 64; haplotype A. EFFULGENS Grd. Same as BOLEOSOMA Dekay, 1842.

Estrella Girard, 64; orthotype E. ATROMACULATA Grd. A synonym of BOLEOSOMA Dekay.

Oligocephalus Girard, 67; haplotype A. LEPIDUS Grd.

Alvordius Girard, 68; haplotype ALVORDIUS MACULATUS Grd. A section of HADROPTERUS Ag.

Alvarius Girard, 101; haplotype A. LATERALIS Grd.

Boleichthys Girard, 103; logotype B. EXILIS Grd.

Adinia Girard, 117; haplotype A. MULTIFASCIATA Grd.

Lucania Girard, 118; haplotype LUCANIA VENUSTA Grd.

657. GIRARD (1859). *Fishes.* (In *General Report Upon Zoology of the Several Pacific Railroad Routes.* 1857.)

CHARLES GIRARD.

Nautichthys Girard, 74; orthotype BLEPSIAS OCULOFASCIATUS Grd.

Xiphidion Girard, 119; orthotype X. MUCOSUM Grd. Name preoccupied as XIPHIDIUM, replaced by XIPHISTER J. & G., 1880.

Thaleichthys Girard, 325; orthotype P. STEVENSI Grd. = SALMO PACIFICUS Rich.

Ichthyomyzon Girard, 379; logotype Petromyzon argenteus Kirtland = Ammocœtes concolor Kirtland.

Scolecosoma Girard, 384; haplotype Ammocœtes concolor Kirtland. Larva of Ichthyomyzon Grd.

658. GIRARD (1859). *Notes Upon Various New Genera and New Species of Fishes, in the Museum of the Smithsonian Institution, and Collected in Connection with the United States and Mexican Boundary Survey, Major William Emory, Commissioner.* Proc. Acad. Nat. Sci. Phila., 1858 (1859), 167-171.

Charles Girard.

Neomænis Girard, 167; orthotype Lobotes emarginatus Baird & Grd.= Labrus griseus L.

Orthopristis Girard, 167; orthotype O. duplex Grd. = Perca chrysoptera L.

Carangus Girard, 168; tautotype Carax carangus Cuv. & Val. = Scomber hippos L. Same as Carangus Griffith. A synonym of Caranx Lac., as restricted.

Doliodon Girard, 168; orthotype Gasterosteus carolinus L. A synonym of Trachinotus Lac.

Chloroscombrus Girard, 168; logotype Seriola cosmopolita Cuv. & Val. = Scomber chrysurus L.

Gobionellus Girard, 168; logotype G. hastatus Grd.

Neoconger Girard, 171; orthotype N. mucronatus Grd.

Neomuræna Girard, 171; orthotype N. nigromarginata Grd. A synonym of Muræna L.

658A. GRAY (1859). *Description of a New Genus of Lophobranchiate Fishes from Western Australia.* Proc. Zool. Soc. London.

John Edward Gray.

Haliichthys Gray, 38; orthotype H. tæniophorus Gray.

659. GÜNTHER (1859). *Catalogue of the Acanthopterygian Fishes of the British Museum.*

Albert Günther (1830-1914).

Anoplogaster Günther, I, 12; orthotype Hoplostethus cornutus Cuv. & Val.

Percalabrax (Schlegel) Günther, I, 71; orthotype Labrax japonicus J. & S.

Trachypoma Günther, I, 167; orthotype T. macracanthus Gthr.

Pogonoperca Günther, I, 169; orthotype P. ocellata Gthr.

Anyperodon Günther, I, 210; orthotype Serranus leucogrammicus Cuv. & Val.

Oligorus Günther, I, 251; orthotype Grystes macquariensis Cuv. & Val.

Odontonectes Günther, I, 265; orthotype Cæsio erythrogaster Kuhl & Van Hasselt.

Hyperoglyphe Günther, I, 337; orthotype Diagramma porosa Rich.

Synagris (Klein) Günther, I, 373; logotype Dentex furcosus Cuv. & Val. A section under Nemipterus Sw., not Synagris Klein as restricted.

Pachymetopon Günther, I, 424; orthotype P. grandis Gthr.

Proteracanthus Günther, I, 426; orthotype Crenidens sarissophorus Cantor.

Tephræops Günther, I, 431; tautotype Crenidens tephræops Rich.

Gymnocrotaphus Günther, I, 432; orthotype G. curvidens Gthr.

Lembus Günther, I, 505; orthotype L. maculatus Gthr. A synonym of Gobiomorus Lac.; Philypnus Cuv.

660. GÜNTHER (1859). *On the Reptiles and Fishes Collected by the Rev. H. B. Tristram in Northern Africa.* Proc. Zool. Soc. London, 1859, 469-474.

ALBERT GÜNTHER.

Haligenes Günther, 471; orthotype H. TRISTRAMI Gthr. A synonym of TILAPIA Smith.

661. HYRTL (1859). *Anatomische Untersuchung des Clarotes (Gonocephalus) heuglini Kner, mit einer Abbildung und einer osteologischen Tabelle der Siluroiden.* Denkschr. Akad. Wiss. Wien, 1859, XVI.

CARL JOSEPH HYRTL.

Notophthalmus Hyrtl, XVI, 17; orthotype HYPOPHTHALMUS MARGINATUS Cuv. & Val. Name preoccupied in Salamanders. A synonym of HYPOPHTHALMUS Spix.

662. KAUP (1859). *Description of a New Species of Fish, Peristethus rieffeli.* Proc. Zool. Soc. London, 1859, pt. 27.

JOHANN JACOB KAUP.

Peristethus Kaup, 103; orthotype P. CATAPHRACTUS. An attempt at amendment of PERISTEDION Lac.

663. KNER (1859). *Zur Familie der Characinen.* III. *Folge der Ichthyologischen Beiträge.* Denkschr. Akad. Wiss. Wien, 1859, XVII.

RUDOLPH KNER (1819-1869).

Microdus Kner, XVIII, 151; orthotype CHILODUS PUNCTATUS M. & T. Preoccupied, replaced by CÆNOTROPUS Gthr., 1864.

Rhytiodus Kner, XVII, 165; logotype R. MICROLEPIS Kner.

Centrophorus Kner, XVII, 167; orthotype PAREIODON MICROPS Kner. Name preoccupied in sharks. Intended as a substitute for PAREIODON, on account of an earlier genus, PARODON, of different etymology.

Bryconops Kner XVII, 179; logotype B. ALBURNOIDES Kner.

664. LEIDY (1859). *Some Remains of Cartilaginous Fishes Discovered by Dr. F. V. Hayden and F. B. Meek in the Carboniferous Formations of Kansas.* Proc. Acad. Nat. Sci. Phila., 1859 (1860), 3.

JOSEPH LEIDY.

Xystracanthus Leidy, 3; orthotype X. ARCUATUS Leidy (fossil).

665. PICTET (1859). *Description des fossiles du terrain Neocomien des Voirons.* Genève, 1859, 1-54.

FRANÇOIS JULES PICTET; PERCIVAL DE LORIOL.

Spathodactylus Pictet & Loriol, III, 2; orthotype S. NEOCOMIENSIS Pictet (fossil).

Crossognathus Pictet & Loriol, III, 27; orthotype C. SABAUDIANUS Pictet (fossil).

666. RATH (1859). *Beitrag zur Kenntniss der fossilen Fische des Plattenberges im Canton Glarus.* Zeitschr. Deutsch. Geol. Ges., 1859, II, 108-132.

J. J. GERHARD VOM RATH (1830-1888).

Archæoides Rath, 112; orthotype A. LONGICOSTATUS Rath (fossil). A synonym of ARCHÆUS.

Thyrsitocephalus Rath, XI, 114; orthotype T. ALPINUS Rath (fossil).

Palæogadus Rath, XI, 126, orthotype P. TROSCHELI Rath (fossil). A synonym of of NEMOPTERYX.

Palæobrosmius Rath, XI, 130; orthotype P. ELONGATUS Rath (fossil). A synonym of NEMOPTERYX Ag.

667. STEINDACHNER (1859). *Beiträge zur Kenntniss der fossilen Fischfauna Oesterreichs.* Sitzb. Akad. Wiss. Wien, math.-nat. Cl., 1859, XXXVII, 673-701.

FRANZ STEINDACHNER (1834-).

This is the first of a very long series of papers mostly dealing with individual species and with unusual accuracy. All these papers are illustrated by excellent figures.

Scorpænopterus Steindachner, XXXVII, 694; orthotype S. SILURIDENS Steind. (fossil).

Aipichthys Steindachner, XXVIII, 763; orthotype A. PRETIOSUS Steind. (fossil).

1860

668. AYRES (1860). *On New Fishes of the California Coast.* Proc. Cal. Acad. Sci., II, 1861.

WILLIAM O. AYRES.

Halias Ayres, II, 52; orthotype BROSMIUS MARGINATUS Ayres. Name preoccupied in butterflies; replaced by BROSMOPHYCIS Gill.

Seriphus Ayres, II, 80; orthotype S. POLITUS Ayres.

Camarina Ayres, 81; orthotype C. NIGRICANS Ayres. A synonym of GIRELLA Gray.

669. BLEEKER (1860). *Over eenige vischsoorten van de Kaap de Goede Hoop.* Nat. Tijdschr. Neder.-Indie, XXI, 1860, 49-80.

PIETER BLEEKER.

Pagrichthys Bleeker, XXI, 60; orthotype P. CASTELNAUI Blkr.

670. BLEEKER (1860). *Zesde bijdrage tot de kennis der vischfauna van Japan.* Act. Soc. Sci. Indo-Neerl., VIII.

PIETER BLEEKER.

Pseudobagrus Bleeker, 87; orthotype BAGRUS AURANTIACUS Schlegel.

Salangichthys Bleeker, 101; orthotype SALANX MICRODON Blkr.

671. BLEEKER (1860). *Achtste bijdrage tot de kennis der vischfauna van Sumatra. Visschen van Benkoelen, Priaman, Tandjong, Palembang en Djambi.* Act. Soc. Sci. Indo-Neerl., VIII, 1860, 1-88.

PIETER BLEEKER.

Cossyphodes Bleeker, 37; orthotype LABRUS MACRODON Lac. A synonym of CHŒRODON Blkr.

Lais Bleeker, 46; orthotype L. HEXANEMA Blkr. Name preoccupied by LAIS Gistel, 1848, VIII, a substitute for CYNTHIA, preoccupied as a genus of TUNICATES; replaceable by LAIDES Jordan, new name.

Silurodes Bleeker, 47; orthotype S. HYPOPHTHALMUS Blkr.

Bagrichthys Bleeker, 54; orthotype BAGRUS HYPSELOPTERUS Blkr.

672. BLEEKER (1860). *Negende bijdrage tot de kennis der vischfauna van Sumatra. Visschen uit de Lematang-Enim en van Benkoelen.* Act. Soc. Sci. Indo-Neerl., VIII, 1860, 1-12.

PIETER BLEEKER.

Akysis Bleeker, 234; orthotype PIMELODUS VARIEGATUS Blkr.

673. BLEEKER (1860). *Dertiende bijdrage tot de kennis der vischfauna van Borneo.* Act. Soc. Sci. Indo-Neerl., VIII, 1860, 1-64.

PIETER BLEEKER.

Trypauchenichthys Bleeker, XIII, 63; orthotype T. TYPUS Blkr.

674. BLEEKER (1860). *Elfde bijdrage tot de kennis der vischfauna van Amboina.* Act. Soc. Sci. Indo-Neerl., VIII, 1860, 1-14.

PIETER BLEEKER.

Scopelosaurus Bleeker, XI, 12; orthotype H. HOEDTI Blkr.

675. BLEEKER (1860). *Dertiende bijdrage tot de kennis der vischfauna van Celebes. Visschen van Bonthain, Badjoa, Sindjai, Lagoesi en Pompenoea.* Act. Soc. Sci. Indo-Neerl., VIII, 1860, 1-60.

PIETER BLEEKER.

Soleichthys Bleeker, 14; orthotype S. HETERORHINOS Blkr.

Macolor Bleeker, 25; orthotype DIACOPE MACOLOR Cuv. & Val. = MACOLOR TYPUS Blkr; replaces PROAMBLYS Gill.

Oxyurichthys Bleeker, 44; orthotype GOBIUS BELOSSO Blkr.

676. BLEEKER (1860). *Ordo Cyprini: Karpers.* Nat. Tijdschr. Neder.-Indie, VII, 1-492.

PIETER BLEEKER.

Girardinichthys Bleeker, 481; orthotype G. INNOMINATUS Blkr. Replaces LIMNURGUS Gthr.

677. BLYTH (1860). *On Some Fishes from the Sitang and Tributary Streams.* Journ. Asiat. Soc. Bengal, XXIX, 138-174.

EDWARD BLYTH.

Bogota Blyth, 139; orthotype B. INFUSCATA Blyth. Apparently the young of PRIACANTHUS Cuv., not BOGODA Blkr.

Sciænoides Blyth, 139; logotype S. BIAURITUS Blyth (Jan., 1860). Same as COLLICHTHYS Gthr., June, 1860, but preoccupied by the tentative name SCIÆNOIDES Rich., 1843.

Microzeus Blyth, XIX, 142; orthotype M. ARMATUS Blyth.

Batasio Blyth, XXIX, 148; tautotype PIMELODUS BATASIO Ham.; replaces GAGATA Blkr.

Hara Blyth, 152; tautotype PIMELODUS HARA Ham. (H. BUCHANANI Blyth). A synonym of ERETHISTES M. & T.

Pseudecheneis Blyth, XXIX, 154; orthotype GLYPTOSTERNON SULCATUS McCl.

Glyptothorax Blyth, XXIX, 154; orthotype G. TRILINEATUS Blyth. A synonym of GLYPTOSTERNON McCl.

Exostoma Blyth, XXIX, 155; orthotype E. BERMOREI Blyth.

Syncrossus Blyth, 166; logotype S. BERDMOREI Blyth. A synonym of BOTIA Gray.

Prostheacanthus Blyth, 167; orthotype P. SPECTABILIS Blyth. A synonym of ACANTHOPSIS Van Hasselt.

Pangio Blyth, 169; orthotype COBITIS PANGIA Ham. A synonym of ACANTHOPHTHALMUS Van Hasselt, as restricted by Bleeker.

Apua Blyth, 169; orthotype A. FUSCA Blyth.

678. CANESTRINI (1860). *Zur Systematik der Percoiden.* Verh. Zool. Bot. Ver. Wien, X.

GIOVANNI CANESTRINI (1835-).

Datnioides (Brisout de Barneville) Canestrini, 305; orthotype not named; teeth on vomer, none on pelatines; not DATINIODES Blkr., 1853. Apparently a synonym of THERAPON Cuv.

Apostata (Heckel) Canestrini, 309; orthotype A. CALCARIFER Heckel = CONODON NOBILIS (L.). A synonym of CONODON Cuv. & Val., 1830.

Asproperca (Heckel) Canestrini, 309; orthotype A. ZEBRA Heckel. A synonym of PERCINA Haldeman.

679, 680. CANESTRINI (1860). *(Fishes.)* Verh. Akad. Wiss. Wien.
GIOVANNI CANESTRINI.

Sphærichthys Canestrini, X, 707; orthotype S. OSPHROMENOIDES Canestrini.

Trichopsis (Kner) Canestrini, X, 708; orthotype T. STRIATUS Blkr. A synonym of CTENOPS McCl.

681. COQUAND (1860). *Description de la géologie du département de Charente.* II.
H. COQUAND.

Orthodon Coquand, II, 126; orthotype O. CONDAMYI (fossil). Name preoccupied in CYPRINIDÆ; an ally of THYELLINA.

682. EGERTON (1860). *(Fossil Fishes.)* Rept. British Association for 1859 (1860).
PHILIP DE MALPAS GREY EGERTON.

Brachyacanthus Egerton, 116; orthotype B. SCUTIGER Egert. (fossil). A synonym of CLIMATIUS Ag.

683. EICHWALD (1860). *Lethæa Rossica ou paléontologie de la Russie décrite et figurée.* Stuttgart. *Pisces.* Vol. I.
KARL EDUARD VON EICHWALD.

Aulacosteus Eichwald, I, 1548; logotype A. COCHLEARIFORMIS Eichw. (fossil); repeated from a Russian paper of 1846. A synonym of PTYCTODUS Pander (1858) and originally of prior date.

Homacanthus Eichwald, I, 1601; orthotype H. TRIANGULARIS Eichw. (fossil). Regarded as a synonym of CALODODUS Ag.; name preoccupied by Agassiz.

684. GILL (1860). *Notes on the Nomenclature of North American Fishes.* Proc. Acad. Nat. Sci. Phila., Vol. XI, for 1860 (printed as a whole in 1861).
THEODORE GILL.

Astroscopus (Brevoort) Gill, 20; orthotype URANOSCOPUS ANOPLOS Cuv. & Val. (young of U. Y-GRÆCUM Cuv. & Val).

Palinurichthys Gill, 20 (Jan., 1860); orthotype CORYPHÆNA PERCIFORMIS Mitchill. Substitute for PALINURUS, preoccupied. A synonym of PALINURICHTHYS Blkr, 1859.

Leptoblennius Gill, 21; orthotype BLENNIUS SERPENTINUS Storer.

685. GILL (1860). *Conspectus piscium in expeditione ad oceanum pacificum Septentrionalem. . . . Stimpson collectorum; Sicydianæ.* Proc. Acad. Nat. Sci. Phila., 1860, 100-102.
THEODORE GILL.

Sicyopterus Gill, 101; orthotype S. STIMPSONI Gill.

Sicyogaster Gill, 102; orthotype S. CONCOLOR Gill. Preoccupied, replaced by LENTIPES Gthr.

686. GILL (1860). *Monograph of the Genus Labrosomus Sw.* Proc. Nat. Sci. Phila., 1860, 102-108.
THEODORE GILL.

Malacoctenus Gill, 103; orthotype CLINUS DELALANDI Cuv. & Val.

Gobioclinus Gill, 103; orthotype CLINUS GOBIO Cuv. & Val.

Blennioclinus Gill, 103; orthotype CLINUS BRACHYCEPHALUS Cuv. & Val.

Auchenionchus Gill, 103; orthotype CLINUS VARIOLOSUS Cuv. & Val. Misprinted ANCHENIONCHUS.

Calliclinus Gill, 103; orthotype CLINUS GENIGUTTATUS.

Ophioblennius Gill, 103; orthotype BLENNOPHIS WEBBI Val. Substitute for BLENNOPHIS Val., preoccupied.

Ophthalmolophus Gill, 104; orthotype CLINUS LATIPINNIS Cuv. & Val.

687. GILL (1860). *Monograph of the Genus Labrax of Cuvier.* Proc. Acad. Nat. Sci. Phila., 1860, 108-120.
THEODORE GILL.

Dicentrarchus Gill, 109; orthotype PERCA ELONGATA St. Hilaire = PERCA LABRAX L. Same as LABRAX (Klein) Cuv., 1817, not LABRAX Pallas, 1811.

688. GUICHENOT (1860). *Notice sur un nouveau poisson du genre des Trichomyctères.* Rev. Mag. Zool., 2d sér., XII.
ALPHONSE GUICHENOT.

Astemomycterus Guichenot, XII, 525; orthotype A. PUSILLUS Guich.

689. GUICHENOT (1860). *Notice sur un nouveau poisson du groupe Ctenolabres (Labrastrum).* Rev. Mag. Zool., 2d sér., XII.
ALPHONSE GUICHENOT.

Labrastrum Guichenot, XII, 152; orthotype (CTENOLABRUS FLAGELLIFER Cuv. & Val. A synonym of DUYMÆRIA Blkr.

690. GÜNTHER (1860). *Catalogue of the Fishes of the British Museum.* II.
ALBERT GÜNTHER.

Atypus Günther, II, 64; orthotype A. STRIGATUS Gthr. Name preoccupied in spiders; replaced by ATYPICHTHYS Gthr., 1862.

Agrammus Günther, II, 94; orthotype LABRAX AGRAMMUS T. & S.

Glyptauchen Günther, II, 121; orthotype APISTUS PANDURATUS Rich.

Centropogon Günther, II, 128; logotype COTTUS AUSTRALIS White.

Pentaroge Günther, II, 132; orthotype APISTUS MARMORATUS Cuv. & Val. A synonym of GYMNAPISTES Sw.

Tetraroge Günther, II, 132; logotype APISTUS BARBATUS Cuv. & Val.

Polycaulus Günther, II, 175; orthotype SYNANCEIA ELONGATA Cuv. & Val.

Ptyonotus Günther, II, 175; orthotype TRIGLOPSIS THOMPSONI Grd. Needlessly proposed as a substitute for TRIGLOPSIS on account of the earlier TRIGLOPS.

Lepidotrigla Günther, II, 196; logotype TRIGLA ASPERA Cuv. & Val. = TRIGLA CAVILLONE Lac.

Agnus Günther, II, 229; orthotype URANOSCOPUS ANOPLOS Cuv. & Val. A synonym of ASTROSCOPUS Gill.

Anema Günther, 229; logotype as restricted by Gill, 1861, URANOSCOPUS ANOPLUS Cuv. & Val. A synonym of ASTROSCOPUS Brevoort.

Kathetostoma Günther, 231; orthotype URANOSCOPUS LÆVIS Bl. & Schn. Sometimes spelled CATHETOSTOMA.

Epicopus Günther, 248; orthotype MERLUS GAYI Guich. A synonym of MERLUCCIUS Raf.

Platystethus Günther, II, 301; orthotype SCIÆNA CULTRATA Forster; preoccupied; replaced by BATHYSTETHUS Gill, 1893.

Collichthys Günther, II, 312; orthotype SCIÆNA LUCIDA Rich. Same as SCIÆNOIDES Blyth, not of Richardson.

Pentanemus (Artedi) Günther, 330; orthotype POLYNEMUS QUINQUARIUS L.

Galeoides Günther, II, 332; orthotype POLYNEMUS POLYDACTYLUS Vahl.

Dicrotus Günther, II, 349; orthotype D. ARMATUS Gthr.

Hypsiptera Günther, II, 386; orthotype H. ARGENTEA Gthr. A larva related to GAIDROPSARUS Raf.

Neptomenus Günther, II, 389; orthotype N. BRAMA Gthr.

Pammelas Günther, II, 485 (June); orthotype CORYPHÆNA PERCIFORMIS Mitchill. Substitute for PALINURUS Dekay, preoccupied. A synonym of PALINURICHTHYS Blkr., 1859.

691. HOLBROOK (1860). *Ichthyology of South Carolina.* (Second edition; the first, in 1855, destroyed by fire.)
JOHN EDWARDS HOLBROOK.
(See No. 536, 1855.)

692. KAUP (1860). *Neue aalähnliche Fische des Hamburger Museums.* Abh. Naturw. Verein Hamburg, 1859 (1860), IV, Abth. 2.
JOHANN JACOB KAUP.

Gnathophis Kaup, 7; orthotype G. HETEROGNATHUS Kaup. (An ally of CONGERMURÆNA HABENATA). Corresponds to CONGERMURÆNA as restricted by Ogilby, not of Bleeker.

Tæniophis Kaup, 10; orthotype T. WESTPHALI Kaup. A synonym of GYMNOTHORAX.

Cryptopterus Kaup, 11; orthotype C. PUNCTICEPS Kaup. Probably a synonym of OPHICHTHYS. Name preoccupied.

Crotalopis Kaup, 12; orthotype C. PUNCTIFER Kaup.

Echiopsis Kaup, 13; orthotype OPHISURUS INTERTINCTUS Rich. A synonym of CROTALOPSIS Kaup.

Hoplunnis Kaup, 19; orthotype H. SCHMIDTI Kaup.

Priodonophis Kaup, 22; orthotype GYMNOTHORAX OCELLATUS Ag.

693. KAUP (1860). *Hoplarchus, neues Genus der Familie Labridæ.* Arch. Naturg., 1860, XXVI, pt. I.
JOHANN JACOB KAUP.

Hoplarchus Kaup, 128; orthotype H. PENTACANTHUS Kaup. A synonym of CICHLAURUS Sw. = (HEROS Heckel).

694. KAUP (1860). *On Some New Genera and Species of Fishes Collected by Doctors Kerferstein and Heckel at Messina.* Ann. Mag. Nat. Hist., VI, 270-273.
JOHANN JACOB KAUP.

Stomiasunculus Kaup, V, 270; orthotype S. BARBATUS Kaup. A larva, allied to STOMIAS.

Porobronchus Kaup, V, 272; orthotype P. LINEARIS Kaup. A larva of CARAPUS (FIERASFER).

695. KAUP (1860). *Ueber die Chætodontidæ.* Wiegm. Archiv. Naturg., XXVI, pt. I, 133-156.
JOHANN JACOB KAUP.

Citharœdus Kaup, 136; logotype CHÆTODON ORNATISSIMUS Solander.

Coradion Kaup, 137; orthotype CHÆTODON CHRYSOZONUS Kuhl & Van Hasselt.

Eteira Kaup, XXVI, 137; orthotype CHÆTODON TRIANGULARIS Rüppell. A synonym of MEGAPROTODON Guich.

Linophora Kaup, 137; orthotype CHÆTODON AURIGA Forskål.

Centropyge Kaup, XXVI, 140; orthotype C. TIBICEN Kaup. A synonym of HOLACANTHUS Lac.

Therapaina Kaup, 140; orthotype CHÆTODON STRIGATUS (Langsdorff) Cuv. & Val. A synonym of MICRACANTHUS Sw.

696. KNER (1860). *Ueber Belonesox belizanus,* etc. Sitzb. Akad. Wiss. Wien, XL.
RUDOLPH KNER.

Belonesox Kner, XL, 419; orthotype B. BELIZANUS Kner.

697. KNER (1860). *Ueber einige noch unbeschriebene Fische.* Sitzb. Akad. Wiss. Wien, XXXIX.
RUDOLF KNER.

Centropus Kner, XXXIX, 531; orthotype C. STAUROPHORUS Kner. Name preoccupied. A synonym of AMPHIPRIONICHTHYS Blkr.

Trichopsis attributed to Kner. A synonym of OSPHRONEMUS Lac. Seems to be a slip of the pen for TRICHOPUS.

698. MARCK (1860). (*Fossile Fische.*) Verh. Nat. Ver. Preuss-Rhein. Westph.
W. VON DER MARCK.

Palæoscyllium von der Marck, 47; orthotype P. DECHENI Marck (fossil). Name only, described in *Palæontographica,* XI, 67, 1863. Name preoccupied. An ally of THYELLINA.

699. MOLIN (1860). *Primitivæ Musei Archigymnasii Patavini* (*Pisces fossiles*). Sitzb. Akad. Wiss. Wien, XL.
RAFFAELE MOLIN.

Protogaleus Molin, XL, 585; orthotype P. CUVIERI Molin (fossil). An ally or synonym of SCOLIODON M. & H.

700. PANDER (1860). *Ueber die Saurodipterinen, Dendrodipterinen, Glyptolepiden und Cheirolepiden des devonischen Systems.* St. Petersb., IX.
CHRISTIAN HEINRICH PANDER.

Polyplacodus Pander, 28; orthotype P. INCURVUS Pander (not of Duff) = P. WENJUKOWI Rohon (fossil). A synonym of CRICODUS Ag.

701. PLIENINGER (1860). (*Xystrodus.*) Neues Jahrbuch.
WILHELM HEINRICH THEODOR VON PLIENINGER.

Xystrodus Plieninger, 695; orthotype X. FINITIMUS Plieninger.

702. POEY (1860). *Peces Ciegos de la Isla de la Cuba.* Memorias de Cuba, II. July, 1860.
FELIPE POEY Y ALOY.

Lucifuga Poey, II, 95; orthotype L. SUBTERRANEUS Poey.

703. POEY (1860). *Poissons de Cuba: Espèces nouvelles.* In *Memorias sobre la historia natural de la Isla de Cuba,* etc. II, 115–356.
FELIPE POEY Y ALOY.

Dinemus Poey, II, 107, 161; orthotype D. VENUSTUS Poey. A synonym of POLYMIXIA, Lowe.

Monoprion Poey, II, 123; orthotype M. MACULATUS Poey. A synonym of APOGON Lac., AMIA Gronow.

Verilus Poey, II, 124; orthotype V. SORDIUS Poey.

Latebrus Poey, II, 168; orthotype L. OCULATUS Poey.

Inermia Poey, II, 193; orthotype I. VITTATA Poey. An ally of EMMELICHTHYS Rich.

Furcaria Poey, II, 194; orthotype F. PUNCTA Poey. An ally or subgenus of CHROMIS Cuv.

Sphyrænops Poey, II, 249; orthotype S. BAIRDIANUS Poey.

Joturus Poey, 263; orthotype J. PICHARDI Poey.

Erotelis Poey, II, 273; orthotype E. VALENCIENNESI Poey = ELEOTRIS SMARAGDUS Cuv. & Val.

Chonophorus Poey, II, 274; orthotype C.BUCCULENTUS Poey = GOBIUS BANANA Cuv. & Val., probably = GOBIUS TAIASICA Lichtenstein. Replaces AWAOUS Steind. of the same year but a few days later.

Smaragdus Poey, II, 279; orthotype GOBIUS SMARAGDUS Cuv. & Val. = SMARAGDUS VALENCIENNESI Poey. A synonym of GOBIONELLUS Grd.

Trifarcius Poey, II, 305; orthotype T. RIVERENDI Poey. A synonym of CYPRINODON Lac.

Rivulus Poey, II, 307; orthotype R. CYLINDRACEUS Poey.

Sardinia Poey, II, 311; orthotype S. PSEUDOHISPANICA Poey (not of Jordan & Evermann, which is SARDINELLA ANCHOVIA Cuv. & Val.). Same as SARDINA Antipa, which it replaces unless it be regarded as preoccupied by SARDINIUS von der Marck.

Pontinus Poey, II, 172; logotype P. CASTOR Poey.

704. SUCKLEY (1860). *Report of the Fishes Collected on the Survey (U. S. Pacific R. R.).* Report on the SALMONIDÆ. (Also in several other papers.)
GEORGE SUCKLEY (1830-).

Oncorhynchus Suckley, 312; orthotype (male of) SALMO SCOULERI Rich. = SALMO GORBUSCHA Walbaum. (The males of the Pacific salmon taken as a genus distinct from the females.)

705. STEINDACHNER (1860). *Beitrag zur Kenntniss der Gobioiden.* Sitzb. Math. Naturw. Classe Wien., XLII.
FRANZ STEINDACHNER

Cyclogobius Steindachner, XLII, 284; orthotype GOBIUS LEPIDUS Grd. A synonym of LEPIDOGOBIUS Gill.

Awaous Steindachner, XLII, 289; type (after "les AWAOUS" Cuv. & Val.; GOBIUS OCELLARIS Cuv. & Val. from Hawaii) "GOBIUS (AWAOUS Val.) LITERATUS Heckel," from the Philippines, is the only species named except for the reference to Valenciennes. The name is a latinization of "les AWAOUS". AWAOUS is a synonym of CHONOPHORUS Poey. As AWAOUS was first used as a scientific name (as-a subgenus of GOBIUS) in an article presented on July 12, 1860, it is probable that CHONOPHORUS Poey, issued in July, 1860, has actual priority.

Oplopomus (Ehrenberg) Steindachner, XLII, 290; orthotype OPLOPOMUS PULCHER Ehrenb. = GOBIUS OPLOPOMUS Cuv. & Val. (XII, 66). Not OPLOPOMA Grd., 1856. Same as CENTROGOBIUS Blkr. (1874).

Gobiopsis Steindachner, XLII, 291; orthotype GOBIUS MACROSTOMUS Heckel. Very close to WAITEA Jordan, 1906.

706. TROSCHEL (1860). *Leptopterygius, neue Gattung der Discoboli.* Arch. Naturg. XXVI, 1.
FRANZ HERMANN TROSCHEL.

Leptopterygius Troschel, XXVI, 205; orthotype L. COCCOI Troschel. A synonym of GOUANIA Nardo = RUPISUGA Sw.

707. WAGNER (1860). *Fossile Fische aus einem neuentdeckten Lager in Südbayerischem Tertiärgebirge.* Südbayer. Akad., I, 1860.

ANDREAS WAGNER.

Alosina Wagner, 54; orthotype A. SALMONEA Wagner (fossil).

708. WAGNER (1860). *Die Griffelzähner (Stylodontes) eine neue aufgestellte Familie . . . der rautenschuppige Ganoiden.* Gelehrte Anz. Bayer. Akad. Wiss., L.

ANDREAS WAGNER.

Homœolepis Wagner, 92; orthotype H. DROSERA Wagner (fossil). A synonym of TETRAGONOLEPIS Bronn.

Heterostichus Wagner, 93; orthotype HETEROSTICHUS LATUS Wagner (fossil). Name preoccupied; replaced by HETEROSTROPHUS Wagner, 1863.

709. WAGNER (1860). *Zur Charakteristik der Gattungen Sauropsis und Pachycormus,* etc. Gelehrte Anz. Bayer. Akad. Wiss., L.

ANDREAS WAGNER.

Hypsocormus Wagner, 214; orthotype H. INSIGNIS Wagner (fossil).

Euthyonotus Wagner, 214; orthotype E MICROPODIUS Ag. (fossil) (ESOX INCOGNITUS Blainv.).

1861

710. AGASSIZ, A. (1861). *Notes on the Described Species of Holconoti Found on the Western Coast of North America.* Proc. Boston Soc. Nat. Hist., 1861, VIII, 122-134.

ALEXANDER AGASSIZ (1835-1910).

Sargosomus (Agassiz) Alex. Agassiz, 128; orthotype S. FLUVIATILIS Agassiz = HYSTEROCARPUS TRASKI Gibbons. A synonym of HYSTEROCARPUS Gibbons.

Metrogaster (Agassiz) Alex. Agassiz, VIII, 128; orthotype CYMATOGASTER AGGREGASUS Gibbons. A synonym of CYMATOGASTER Gibbons.

Bramopsis (Agassiz) Alex. Agassiz, VIII, 132; orthotype B. MENTO Agassiz = HYPERPROSOPON ARGENTEUS Gibbons. A synonym of HYPERPROSOPON.

Tæniotoca Alexander Agassiz, VIII, 133; orthotype EMBIOTOCA LATERALIS Agassiz.

Hypsurus Alexander Agassiz, VIII, 133; orthotype EMBIOTOCA CARYI Agassiz.

711. BLEEKER (1861). *Iets over de geslachten der Scaroiden en hunne Indisch-archipelagische soorten.* Versl. Akad. Amsterdam, XII, 1861, 228-244.

PIETER BLEEKER.

Pseudodax Bleeker, 229; orthotype ODAX MOLUCCANUS Cuv. & Val.

Callyodontichthys Bleeker, 230; orthotype SCARUS FLAVESCENS Blkr. (not of Bloch & Schneider).

Pseudoscarus Bleeker, 231; logotype P. MICRORHINOS Blkr.

712. BLEEKER (1861). *(Labridæ.)* Proc. Zool. Soc. London, 1861.

PIETER BLEEKER.

Ophthalmolepis Bleeker, 413; orthotype JULIS LINEOLATUS Cuv. & Val.

713. BLEEKER (1861). *Zesde bijdrage tot de kennis der vischfauna van Timor.* Nat. Tijdschr. Neder.-Indie, XXII, 1861, 247-261.

PIETER BLEEKER.

Oxymetopon Bleeker, VI, 12; orthotype O. TYPUS Blkr.

714. BLEEKER (1861). *Notice sur le genre Trachinus et ses espèces.* Ann. Sci. Nat., XVI; reprinted in 1862.

PIETER BLEEKER.

Echiichthys Bleeker, 379; orthotype E. VIPERA Blkr.
Pseudotrachinus Bleeker, 379; orthotype P. RADIATUS Blkr.

715. CASTELNAU (1861) *Mémoire sur les poissons de l'Afrique Australe.* Paris, VII.

FRANÇOIS LAPORTE DE CASTELNAU.

Boopsidea Castelnau, 25; orthotype. B. INORNATA Castelnau.
Ichthyorhamphos Castelnau, 35; orthotype I. PAPPEI Castelnau. A synonym of OPLEGNATHUS.
Sandelia Castelnau, 36; orthotype S. BAINSI Castelnau. A synonym of SPIROBRANCHUS.
Stromatoidea Castelnau 44; orthotype S. LAYARDI Castelnau, not STROMATEOIDES Blkr., 1851.
Gnathendalia Castelnau, 57; orthotype G. VULNERATA Castelnau.
Hydrocyonoides Castelnau, 66; orthotype H. CUVIERI Castelnau; a synonym of SARCODACES.
Algoa Castelnau, 69; orthotype A. VIRIDIS Castelnau.
Athæna Castelnau, 72; orthotype A. FASCIATA Castelnau.
Aledon Castelnau, 75; orthotype A. STORERI Castelnau. A synonym of Mola.

716. COSTA (1861). *(Fossil Fishes.): Palcontologia Regno Napoli.* III.

ORONZIO GABRIELE COSTA.

Centropterus Costa, III, 123; orthotype C. LIVIDUS Costa (fossil). An ally of ETMOPTERUS Raf.

717. EGERTON (1861). *Description of Tristichopterus, Acanthodes, Climatius,* etc. (In *Figures and Descriptions of British Organic Remains.*) Mem. Geol. Surv., 1861.

PHILIE DE MALPAS GREY EGERTON.

Holophagus Egerton, X, 19; orthotype H. GULA Egert. (fossil). A synonym of UNDINA Münster.
Tristichopterus Egerton, 51; orthotype T. ALATUS Egert. (fossil).

718. FILIPPI (1861). *Note Zoologische.* Arch. Zool. Anat. Fisiol., I.

FILIPPO DE FILIPPI.

Lebistes Filippi, I, 69; orthotype L. PŒCILOIDES Filippi.

719. GILL (1861). *Catalogue of the Fishes of the Eastern Coast of North America, from Greenland to Geórgia.* Issued as a supplement to the *Proc. Acad. Nat. Sci. Phila.,* 1861, and dated February, 1861.

THEODORE GILL.

In this paper numerous new generic names are introduced in connection with the type species, the genera being defined later. Under present usage, these names date from the indication of the type species. No question of priority is here concerned except with REINHARDTIUS Gill, called PLATYSOMATICHTHYS by Bleeker in 1862, before REINHARDTIUS was defined, and HYPSOBLENNIUS Gill, called ISESTHES by Jordan & Gilbert, 1881, before a definition of HYPSOBLENNIUS was published.

NOTE. The most of the many new genera, indicated by American authors from 1860 to 1875, occur in the proceedings of scientific societies in Philadelphia, New York and Boston, and especially in those of the Academy of Natural Sciences in Philadelphia. The bound volumes of these proceedings were issued in the year subsequent to the reading of the papers, as for example that of 1861 in 1862. But separate copies of most of these papers were issued in the date year. In this record, the papers are credited to the date year. In the few cases in which questions of priority are involved, I have tried to secure the exact dates concerned.

Uranoblepus 5; orthotype (not named) SYNANCEIA ELONGATA Cuv. & Val. A substitute for TRACHICEPHALUS Sw., preoccupied. A synonym of POLYCAULUS Gthr., 1860.

Ctenolucius Gill, 8; orthotype not named = LUCIOCHARAX INSCULPTUS Steind. It is described as an ally of XIPHOSTOMA, a South American CHARACIN, identical with LUCIOCHARAX Steind., 1876, which name it should replace.

Triloburus Gill, 30; orthotype PERCA TRIFURCA L. = P. PHILADELPHICA L. A section of CENTROPRISTES Cuv.

Promicropterus Gill, 31; orthotype RYPTICUS MACULATUS Holbrook = BODIANUS BISTRISPINUS Mitchill.

Anisotremus Gill, 32; orthotype PRISTIPOMA RODO Cuv. & Val. = SPARUS VIRGINICUS L.

Bairdiella Gill, 33; orthotype BODIANUS ARGYROLEUCUS Mitchill = DIPTERODON CHRYSURUS Lac.

Palinurichthys Gill, 34; orthotype PALINURUS PERCIFORMIS Storer. Substitute for PALINURUS, preoccupied; a synonym of PALINURICHTHYS Blkr., 1860.

Poronotus Gill, 35; orthotype RHOMBUS TRIACANTHUS Storer.

Lepturus (Artedi) Gill, 35; orthotype TRICHIURUS LEPTURUS L. A revival of a pre-Linnæan name. A synonym of TRICHIURUS L.

Blepharicthys Gill, 36; orthotype ZEUS CRINITUS Mitchill. A substitute for BLEPHARIS Cuv., preoccupied. A synonym of ALECTIS Raf.

Solenostomus (Gronow) Gill, 38; orthotype FISTULARIA TABACARIA L. A synonym of FISTULARIA L.

Pygosteus (Brevoort) Gill, 39; orthotype GASTEROSTEUS OCCIDENTALS Cuv. & Val. Val. = G. PUNGITIUS L.

Trichidion (Klein) Gill, 40; logotype POLYNEMUS VIRGINICUS L. A revival of a pre-Linnæan name. A synonym of POLYNEMUS L.

Argyrotænia Gill, 40; orthotype AMMODYTES VITTATUS Storer. A synonym of AMMODYTES L.

Oncocottus Gill, 42; orthotype COTTUS HEXACORNIS Storer = COTTUS QUADRICORNIS Rich. Misprinted ONCHOCOTTUS.

Hypleurochilus Gill, 44; logotype BLENNIUS MULTIFILIS Grd. = BLENNIUS GEMINATUS Wood.

Dormitator Gill, 44; orthotype ELEOTRIS SOMNOLENTUS Grd. = SCIÆNA MACULATA Bloch.

Hypsoblennius Gill, 44; orthotype BLENNIUS HENTZ Le Sueur (no description of genus). Replaces ISESTHES J. & G.

Leptoblennius Gill, 44; orthotype BLENNIUS SERPENTINUS Storer.

Centroblennius Gill, 45; logotype LUMPENUS NUBILUS Rich.

Leptoclinus Gill, 45; orthotype LUMPENUS ACULEATUS Reinh.

Reinhardtius Gill, 50; orthotype PLEURONECTES CYNOGLOSSUS Fabricius, not of L.=

PLEURONECTES HIPPOGLOSSOIDES Walbaum. Replaces PLATYSOMATICHTHYS Blkr., 1862.

Chænopsetta Gill, 50; orthotype PLATESSA OBLONGA Storer. A synonym of PARALICHTHYS Grd.

Drepanopsetta Gill, 50; orthotype PLEURONECTES PLATESSOIDES Fabricius. A synonym of HIPPOGLOSSOIDES Gottsche.

Myzopsetta Gill, 51; orthotype PLATESSA FERRUGINEA Storer. A synonym of LIMANDA Gottsche.

Lophopsetta Gill, 51; orthotype PLEURONECTES MACULATUS Mitchill.

Glossichthys Gill, 51; orthotype PLEURONECTES PLAGUSIA L. A synonym of SYMPHURUS Raf.

Trachinocephalus Gill, 53; orthotype SAURUS MYOPS Cuv. & Val.

Alausella Gill, 54; orthotype CLUPEA PARVULA Mitchill. A synonym of POMOLOBUS Raf.

Opisthonema Gill, 54; orthotype "O. THRISSA Gill" (not CLUPEA THRISSA Osbeck) = MEGALOPS OGLINA Le Sueur.

Brevoortia Gill, 55; orthotype ALOSA MENHADEN Storer = CLUPEA TYRANNUS Latrobe.

Conorhynchus (Nozemann) Gill, 55; orthotype BUTYRINUS VALPES Storer (ALBUTA VALPES). Revival of a pre-Linnæan name, 1757; a synonym of ALBULA Gronow.

Isognatha (Dekay) Gill, 56; orthotype ANGUILLA OCEANICA Storer = MURÆNA CONGER L. A synonym of LEPTOCEPHALUS Gronow = CONGER Cuv.

Ariopsis Gill, 56; orthotype ARIUS MILBERTI = SILURUS FELIS L. A synonym of HEXANEMATICHTHYS Blkr., 1858.

Ceratacanthus Gill, 57; orthotype MONACANTHUS AURANTIACUS.

Aprionodon Gill, 59; orthotype SQUALUS PUNCTATUS Mitchill. A substitute for APRION; preoccupied in fishes.

Cestracion (Klein) Gill, 59; orthotype SQUALUS ZYGÆNA L. A synonym of SPHYRNA Raf.

Eugomphodus Gill, 60; orthotype CARCHARIAS GRISEUS Storer. A section under ODONTASPIS Agassiz = CARCHARIAS Raf.

Narcacion (Klein) Gill, 61; orthotype (RAJA TORPEDO L.). A revival of a pre-Linnæan name; same as TORPEDO Dum.

720. GILL (1861). *Synopsis of the Subfamily of Clupeinæ,* etc. Proc. Acad. Nat. Sci. Phila., 1861.
THEODORE GILL.

Alausella Gill, 36; orthotype CLUPEA PARVULA Mitchill, the young of some species of POMOLOBUS, perhaps P. MEDIOCRIS (repeated from *Catalogue Fishes East Coast).*

Opisthonema Gill, 37; orthotype CLUPANODON THRISSA Lac. (not of Osbeck) = MEGALOPS OGLINA Le Sueur (repeated from *Catalogue*).

Opisthopterus Gill, 37, 38; orthotype PRISTIGASTER TARTOOR Cuv. & Val.

Brevoortia Gill, 37; orthotype CLUPEA MENHADEN Mitchill = CLUPEA PATRONUS Latrobe. (Repeated from *Catalogue.*)

721. GILL (1861). *Synopsis of the Family of Percinæ.* Proc. Acad. Nat. Sci. Phila.
THEODORE GILL.

Asperulus (Klein) Gill, 46; orthotype PERCA ZINGEL L. Equivalent to ZINGEL Oken = ASPRO Cuv.

Kuhlia Gill, 48; orthotype PERCA CILIATA Cuv. & Val.
Hypopterus Gill, 51; orthotype PSAMMOPERCA MACROPTERA Gthr.
Percosoma Gill, 51; orthotype PERCICHTHYS CHILENSIS Grd.
Deuteropterus Gill, 51; orthotype PERCA MARGINATA Cuv. & Val.
Liopropoma Gill, 52; orthotype PERCA ABERRANS Poey.

722. GILL (1861). *Synopsis generum Rhyptici et Affinum.* Proc. Acad. Nat. Sci. Phila.

THEODORE GILL.

Dermatolepis Gill, 54; orthotype D. PUNCTATUS Gill.

723. GILL (1861). *On Several New Generic Types of Fishes.* Proc. Acad. Nat. Sci. Phila., 1861.

Podothecus Gill, 77, 259; orthotype P. PERISTETHUS Gill = AGONUS ACIPENSIRINUS Pallas.
Brachyopsis Gill, 77; orthotype not named; said to be same as AGONUS Sw.
Hoplopagrus Gill, 78; orthotype H. GUNTHERI Gill.
Rhinoscion Gill, 78; orthotype AMBLODON SATURNUS Grd.
Stephanolepis Gill, 78; orthotype MONACANTHUS SETIFER Bennett.

724. GILL (1861). *Revision of the Genera of North American Sciæninæ.* Proc. Acad. Nat. Sci. Phila.

THEODORE GILL.

Cynoscion Gill, 81; orthotype OTOLITHUS REGALIS Cuv. & Val.
Anomiolepis Gill, 82; orthotype a Chinese species unnamed, allied to CORVINA TRIDENTIFER Rich., but without small teeth in upper jaw.
Plagioscion Gill, 82; no species indicated; logotype SCIÆNA SQUAMOSISSIMA Heckel, of Brazil.
Rhinoscion Gill, 78, 85; orthotype AMBLODON SATURNUS Grd. A synonym of CHEILOTREMA Tschudi.
Menticirrhus Gill, 86; orthotype PERCA ALBURNUS L. = CYPRINUS AMERICANUS L., 1758.
Pachypops Gill, 87; orthotype P. TRIFILIS Gill.
Genyonemus Gill, 87; orthotype LEIOSTOMUS LINEATUS Ayres.

725. GILL (1861). *Two New Species of Marine Fishes.* Proc. Acad. Nat. Sci. Phila.

THEODORE GILL.

Hyporthodus Gill, 98; orthotype H. FLAVICAUDA Gill = SERRANUS NIVEATUS Cuv. & Val. A synonym of EPINEPHALUS Bloch.
Sarothrodus Gill, 99; orthotype CHÆTODON CAPISTRATUS Gill. Name a substitute for CHÆTODON as used generally, the name being tranferred to POMACANTHUS, to the species called CHÆTODON by Artedi (1738, before Linnæus), none of them being true CHÆTODONS. This change seems needless and not allowable.

726. GILL (1861). *Haploidonotinæ.* Proc. Acad. Nat. Sci. Phila.

THEODORE GILL.

Haploidonotus Gill, 101; orthotype APLODINOTUS GRUNNIENS Raf. A revision of the spelling of APLODINOTUS.

727. GILL (1861). *Synopsis of the Uranoscopoids.* Proc. Acad. Nat. Sci. Phila.

THEODORE GILL.

Nematagnus Gill, 113; orthotype URANOSCOPUS FILIBARBIS Cuv. & Val.
Upselonphorus Gill, 113; orthotype URANOSCOPUS Y-GRÆCUM Cuv. & Val. A synonym of ASTROSCOPUS Brevoort.
Cathetostoma Gill, 114; orthotype URANOSCOPUS LÆVIS Bloch. A revised spelling of KATHETOSTOMA.
Genyagnus Gill, 115; orthotype URANOSCOPUS MONOPTERYGIUS Bloch.
Gnathagnus Gill, 115; orthotype URANOSCOPUS ELONGATUS T. & S.

728. GILL (1861). *Notes on Some Genera of Fishes of the Western Coast of North America.* Proc. Acad. Nat. Sci. Phila.
THEODORE GILL.

Atractoperca Gill, 164; orthotype LABRAX CLATHRATUS Grd. A synonym of PARALABRAX Grd.
Archoplites Gill, 165; orthotype AMBLOPLITES INTERRUPTUS Grd.
Parephippus Gill, 165; orthotype EPHIPPUS ZONATUS Grd. A synonym of CHÆTODIPTERUS Lac.
Hypsypops Gill, 165; orthotype GLYPHISODON RUBICUNDUS Girard.
Sebastodes Gill, 165; orthotype SEBASTES PAUCISPINIS Ayres.
Acantholebius Gill, 166; orthotype CHIROPSIS NEBULOSUS Grd. = HEX. STELLERI Tilesius. A synonym of HEXAGRAMMOS Steller.
Pleurogrammus Gill, 166; orthotype LABRAX MONOPTERYGIUS Pallas.
Grammatopleurus Gill, 166; orthotype LABRAX LAGOCEPHALUS Pallas. A synonym of HEXAGRAMMOS Steller.
Megalocottus Gill, 166; orthotype COTTUS PLATYCEPHALUS Pallas.
Clinocottus Gill, 166; orthotype OLIGOCOTTUS ANALIS Grd.
Blennicottus Gill, 166; orthotype OLIGOCOTTUS GLOBICEPS Grd.
Hypsagonus Gill, 167, 259; orthotype ASPIDOPHORUS QUADRICORNIS Cuv. & Val.
Paragonus Gill, XIII, 167, 259; orthotype AGONUS ACIPENSERINUS Tilesius. A synonym of PODOTHECUS Gill.
Agonopsis Gill, XIII, 167, 259; orthotype ASPIDOPHORUS CHILOËNSIS Kröyer.
Leptagonus Gill, XIII, 167, 259; orthotype AGONUS SPINOSISSIMUS Kröyer.
Brachyopsis Gill, 167, 259; logotype AGONUS ROSTRATUS Tilesius.
Anoplagonus Gill, 167; orthotype ASPIDOPHOROIDES INERMIS Gthr.
Brosmophycis Gill, 168; orthotype BROSMIUS MARGINATUS Ayres.

729. GILL (1861). *On a New Type of Aulostomatoids, Found in Washington Territory.* Proc. Acad. Nat. Sci. Phila.
THEODORE GILL.

Aulorhynchus Gill, 169; orthotype A. FLAVIDUS Gill.

730. GILL (1861). *Description of a New Generic Type of Blennioids.* Proc. Acad. Nat. Sci. Phila.
THEODORE GILL.

Anoplarchus Gill, 261; orthotype A. PURPURESCENS Gill.

731. GILL (1861). *Monograph of the Tridigitate Uranoscopoids.* Proc. Acad. Nat. Sci. Phila.
THEODORE GILL.

Myxodagnus Gill, 269; orthotype M. OPERCULARIS Gill.

732. GILL (1861). *Synopsis of the Polynematoids.* Proc. Acad. Nat. Sci. Phila.
THEODORE GILL.

Polistonemus Gill, 277; orthotype POLYNEMUS MULTIFILIS T. & S.

733. GILL (1861). *Synopsis of the Sillaginoids.* Proc. Acad. Nat. Sci. Phila.

THEODORE GILL.

Leptoperca Gill, 502; orthotype PERCA SCHRÆTZER L. Same as SCHRAITZER Schaefer, if the latter is eligible

Sillaginodes Gill, 504; orthotype SILLAGO PUNCTATA Cuv. & Val.

Sillaginopsis Gill, 505; orthotype SILLAGO DOMINA Cuv. & Val.

734. GILL (1861). *Snyopsis of the Chœnichthyoids.* Proc. Acad. Nat. Sci. Phila.

THEODORE GILL.

Champsocephalus Gill, 509; orthotype CHÆNICHTHYS ESOX Gthr.

735. GILL (1861). *Synopsis of the Notothenioids.* Proc. Acad. Nat. Sci.

THEODORE GILL.

Macronotothen Gill, 520; orthotype NOTOTHENIA ROSSI Rich.

Eleginops Gill, 522; logotype APHRITIS UNDULATUS Jenyns.

736. GILL (1861). *Analytical Synopsis of the Squali and Revision of the Nomenclature of the Genera, Followed by "Squalorum generum novorum descriptiones diagnosticæ,"* 330-422; reprint, 1-47. Ann. Lyc. Nat. Hist. N. Y., VII, Dec., 1861.

THEODORE GILL.

Isuropsis Gill, VII, 32 (397); orthotype OXYRHINA GLAUCA M. & H. (not SQUALUS GLAUCUS L.).

Hypoprionodon Gill, 35 (400); orthotype CARCHARIAS HEMIODON Val.

Platypodon Gill, 35 (400): orthotype CARCHARIAS MENISORRAH M. & H.

Eulamia Gill, 35 (400); orthotype "CARCHARIAS LAMIA Raf." = CARCHARHINUS COMMERSONIANUS Blainv. A synonym of CARCHARHINUS Blainv.

Isogomphodon Gill, 35 (400); orthotype CARCHARIAS OXYRHYNCHUS M. & H.

Lamiopsis Gill, 35 (400); orthotype CARCHARIAS TEMMINCKI M. & H.

Isoplagiodon Gill, VII, 35 (400); orthotype CARCHARIAS SORRAH Val.

Aprionodon Gill, VII, 35 (400); orthotype CARCHARIAS ISODON M. & H. Substitute for APRION, preoccupied.

Cynocephalus (Klein) Gill, VII, 35 (400); logotype SQUALUS GLAUCUS L. Name preoccupied in monkeys, unless dating from Klein *(Schauplatz).* A synonym of PRIONACE Cantor.

Boreogaleus Gill, VII, 36 (401); orthotype SQUALUS ARCTICUS Faber.

Chænogaleus Gill, VII, 36 (401); orthotype HEMIGALEUS MACROSTOMA Gthr. Probably not distinct from HEMIGALEUS, which preoccupied name it should perhaps replace.

Reniceps Gill, VII, 37 (402); orthotype SQUALUS TIBURO L.

Cestracion (Klein) Gill, 37 (402); orthotype SQUALUS ZYGÆNA L. A synonym of SPHYRNA Raf., not CESTRACION Cuv., 1817.

Eusphyra Gill, VII, 37 (402); orthotype ZYGÆNA BLOCHI Cuv.

Halælurus Gill, 41 (406) orthotype SCYLLIUM BURGERI M. & H.

Cephaloscyllium Gill, 42 (403); orthotype SCYLLIUM LATICEPS A. Duméril.

Parascyllium Gill, VII, 42 (412); orthotype HEMISCYLLIUM VARIOLATIUM Dum.

Synchismus Gill, 42 (407); orthotype SQUALUS TUBERCULATUS Bl. & Schn. A synonym of CHILOSCYLLIUM M. & H.

Rhina (Klein) Gill, VII, 42 (407); orthotype RHINA SQUATINA Raf. = SQUALUS SQUATINA L., after Klein, 1745-1775. A synonym of SQUATINA Constant Duméril, 1806.

Rhamphobatis Gill, VII, 42 (407); type RHINA ANCYLOSTOMA. A synonym of RHINA Bl. & Schn., not of RHINA Klein.

737. GILL (1861). *(Torpedo.)* Ann. Lyc. N. Y., VIII, 1861.
THEODORE GILL.

Tetranarce Gill, VII, 387; orthotype TORPEDO OCCIDENTALIS *Storer*. A section or subgenus under TORPEDO Dum.; misprinted TETRONARCE.

Cyclonarce Gill, VII, 387; orthotype RAJA TIMLEI Bl. & Schn. A synonym of NARCINE Henle.

Gonionarce Gill, VII, 387; orthotype NARCINE INDICA Henle. A synonym of NARCINE Henle.

738. GILL (1861). *Observations on the Genus Cottus,* etc. Proc. Boston Soc. Nat. Hist., VIII.
THEODORE GILL.

Potamocottus Gill, 40; logotype P. PUNCTULATUS Gill. A synonym of COTTOPSIS Grd.

739. GULIA (1861). *Tentamen ichthyologiæ Melitensis,* etc. (In Latin; also in Maltese as *Catalogu tal hut ta Malta.)*
GAVINO GULIA (*d.* 1889).

Micromugil Gulia, 11; orthotype M. TUMIDUS Gulia = CYPRINODON CALARITANUS Cuv. & Val. A synonym of APHANIUS Nardo.

740. GÜNTHER (1861). *Catalogue of the Fishes of the British Museum.* III.
ALBERT GÜNTHER.

Latrunculus Günther, III, 80; orthotype GOBIUS ALBUS Parnell.

Lentipes Günther, III, 96; orthotype SICYOGASTER CONCOLOR Gill. A substitute for SICYOGASTER Gill, preoccupied.

Vulsus Günther, III, 151; otrhotype CALLIONYMUS DACTYLOPUS Bennett. A synonym of DACTYLOPUS Gill, wrongly stated to be preoccupied.

Thalassophryne Günther, III, 174; orthotype T. MACULOSA Gthr.

Saccarius Günther, III, 183; orthotype S. LINEATUS Gthr.

Auchenopterus Günther, III, 275; orthotype A. MONOPHTHALMUS Gthr. Name re garded as preoccupied as AUCHENIPTERUS Cuv. & Val.; replaced by CREMNOBATES Gthr.

Asternopteryx (Rüppell) Günther, II, 288; orthotype A. GUNNELLIFORMIS Rüppell.

Acronurus (Gronow) Günther, II, 345; logotype ACANTHURUS ARGENTEUS Q. & G. Larval form of HEPATUS Gronow (ACANTHURUS Forskål).

Myxus Günther, III, 466; logotype M. ELONGATUS Gthr.

Diplocrepis Günther, III, 506; orthotype LEPADOGASTER PUNICEUS Rich.

Crepidogaster Günther, III, 507; logotype C. TASMANIENSIS Gthr. Name preoccupied; replaced by ASPASMAGASTER Waite.

Psychrolutes Günther, III, 516; orthotype P. PARADOXUS Gthr.

741. GÜNTHER (1861). *On a New Genus of Australian Fresh-water Fishes, Nannoperca australis.* Ann. Mag. Nat. Hist., VII. Also in Proc. Zool. Soc. London, 1861, 116.
ALBERT GÜNTHER.

Nannoperca Günther, VII, 410; orthotype N. AUSTRALIS Gthr.

742. GÜNTHER (1861). *On Three New Trachinoid Fishes, Crapatalus,* etc. Ann. Mag. Nat. Hist., 1861, VII.
ALBERT GÜNTHER.

Crapatalus Günther, VII, 86; orthotype C. NOVÆZELANDIÆ Gthr.

743. GÜNTHER (1861). *A Preliminary Synopsis of the Labroid Genera.* Ann. Mag. Nat. Hist., VIII.

Hypsigenys Günther VIII, 383; logotype LABRUS MACRODONTUS Lac. A synonym of CHŒRODON Blkr.

Semicossyphus Günther, VIII, 384; orthotype COSSYPHUS RETICULATUS Cuv. & Val.

Stethojulis Günther, VIII, 386; logotype JULIS STRIGIVENTER Bennett.

Hemigymnus Günther, IV, 386; orthotype MULLUS FASCIATUS Thunberg (1776). A synonynm of THALLIURUS Sw.

743A. GÜNTHER (1861). *On a Collection of Fishes Sent by Capt. Dow from the Pacific Coast of Central America.* Proc. Zool. Soc. London.

ALBERT GÜNTHER.

Cremnobates Günther, 374; orthotype AUCHENOPTERUS MONOPHTHALMUS Gthr. A substitute for AUCHENOPTERUS Gthr., preoccupied as AUCHENIPTERUS.

744. JEITTELES (1861). *Zoologische Mittheilungen. I. Ueber zwei für die Fauna Ungarns neue Fische, Lucioperca volgensis Cuv. und Val. und Alburnus maculatus Kessler.* Verh. Zool. Bot. Ges. Wien, XI.

LUDWIG HEINRICH JEITTELES (1830-1883).

Alburnoides Jeitteles, XI, 325; orthotype ALBURNUS MACULATUS Kessler.

745. KEYSERLING (1861). *Neue Cypriniden aus Persien.* Zeits. Ges. Naturw. Berlin, XVII.

EUGEN VON KEYSERLING (1833-1889).

Bungia Keyserling, XVII, 18; orthotype B. NIGRESCENS Keys.

746. KRÖYER (1861). *Nogle Bidrag tel Nordisk ichthyologii.* Nat. Tidskr. 1861.

HENRIK NICOLAI KRÖYER.

Careproctus Kröyer, I, 257; orthotype C. REINHARDTI Kröyer.

746A. MOLIN (1861). *De Rajibus tribus Bolcanis.* XLII. *Raffaele Molin.* Sitzb. Akad. Wiss. Wien.

Alexandrinus Molin, 579; orthotype A. MOLINI Zigno (fossil) (*Mem. Reale Inst. Veneto,* VIII, 299, 1874) = RAJA MURICATA Volta, 1796. A synonym of TÆNIURA M. & H.

WILHELM CARL HARTWIG PETERS.

747. PETERS (1861). *Ueber zwei neue Gattungen von Fischen . . . aus dem Ganges,* etc. Mon. Akad. Wiss. Berlin.

WILHELM CARL HARTWIG PETERS.

Pterocryptis Peters, 712; orthotype PTEROCRYPTIS GANGETICA Peters.

Acanthocobitis Peters, 712; ortohtype A. LONGIPINNIS Peters.

748. POEY (1861). *Poissons de Cuba.* Memorias de Cuba, II, June, 1861.

FELIPE POEY Y ALOY.

Hollardia Poey, II, 348; orthotype H. HOLLARDI Poey.

Limia Poey, II, 383; orthotype PŒCILIA VITTATA Guich. A synonym of PŒCILIA Bl. & Schn.

Prospinus Poey, II, 388; logotype PLECTROPOMA CHLOROPTERUM Cuv. & Val. A synonym of ALPHESTES Bl. & Schn.

Decaptus Poey, II, 391; orthotype SERIOLA PINNULATA. Poey. A synonym of ELAGATIS Bennett.

749. SALTER (1861). *(Byssacanthus.)* Mem. Geol. Soc., 1861.
JOHN WILLIAM SALTER (1820-1869).

Byssacanthus Salter, 244; orthotype a finspine allied to SPHENACANTHUS (fossil).

750. SCHMID (1861). *Die Fischfauna der Trias bei Jena.* Nova Acta Acad. Cæs. Leop.-Carol. XXIX, 1862 (separates in 1861).
E. E. SCHMID.

Thelodus Schmid, XXIX, 27; logotype T. INFLATUS Schmid (fossil). A synonym of ASTERODON.

751. SYMONDS (1861). *Old Bones.*
WILLIAM SAMUEL SYMONDS (1818-1887).

Lophodus Symonds, 103; (orthotype ACRODUS KEUPERIANUS M. & S.) (fossil) (not LOPHODUS Romanowsky, 1864).

752. VALENCIENNES (1861). *(Acanthomullus.)* Comptes Rendus Acad. Sci. Paris, LII, 1861.
ACHILLE VALENCIENNES.

Acanthomullus Valenciennes, LII, 300; orthotype A. ISABELLÆ Val. (fossil).

1862

753. BLEEKER (1862). *Notice sur le genre Trachinus et ses espèces.* Versl. Akad. Amsterdam (reprinted from 1861).
PIETER BLEEKER.

Pseudotrachinus Bleeker, 113; orthotype P. RADIATUS Blkr.

Echiichthys Bleeker, 117; orthotype E. VIPERA Blkr.

754. BLEEKER (1862). *Conspectus generum Labroideorum analyticus.* Versl. Akad. Amsterdam, XIII, 1862, 94-109.
PIETER BLEEKER.

Pseudocheilinus Bleeker, 95; orthotype CHEILINUS HEXATÆNIA Blkr.

Pseudocoris Bleeker, 97; orthotype JULIS HETEROPTERUS Blkr.

Pseudojulis Bleeker, 99; orthotype P. GIRARDI Blkr.

Platyglossus (Klein) Bleeker, 99; orthotype HALICHŒRES MARGINATUS Rüppell.

Hemitautoga Bleeker, 101; orthotype TAUTOGA NOTOPHTHALMUS Blkr. A synonym of CORIS Lac.

Macropharyngodon Bleeker, 100; orthotype JULIS GEOFFROYI Blkr.

Guntheria Bleeker, 101; orthotype JULIS TRIMACULATA, Q. & G.

Leptojulis Bleeker, 100; orthotype L. CYANOPLEURA Blkr.

Hemitautoga Bleeker, 101; orthotype TAUTOGA NOTOPHALMUS Blkr. A synonym of GUNTHERIA Blkr.

Pseudolabrus Bleeker, 101; orthotype LABRUS RUBIGINOSUS T .& S. (preoccupied) = L. JAPONICUS Houttuyn.

Novaculichthys Bleeker, 102; orthotype LABRUS MACROLEPIDOTUS Bloch.

Diproctacanthus Bleeker, 104; orthotype LABROIDES XANTHURUS Blkr.

755. BLEEKER (1862). *Sixième mémoire sur la fauna ichthyologique de l'île Batjan.* Versl. Akad Amsterdam, XIV, 1862, 99-112.
PIETER BLEEKER.

Enchelyopus (Klein) Bleeker, 109; orthotype TRICHIURUS LEPTURUS L., not of Gronow. A synonym of TRICHIURUS L.

Eleutheronema Bleeker, 110; orthotype POLYNEMUS TETRADACTYLUS Shaw.

756. BLEEKER (1862). *Sur quelques genres de la famille des Pleuronectoides,* Versl. Akad. Amsterdam, XIII.

PIETER BLEEKER.

Citharus Bleeker, XIII, 424; tautotype PLEURONECTES CITHARUS Spinola = P. LINGUATULA L. Same as CITHARUS Röse, 1793; the later CITHARUS, being preoccupied, has been replaced by EUCITHARUS Gill.

Hemirhombus Bleeker, XIII, 425; orthotype H. GUINEENSIS Bleeker. A synonym of SYACIUM Ranzani.

Clidoderma Bleeker, XIII, 425; orthotype PLEURONECTES ASPERRIMA, T. & S.

Pseudorhombus Bleeker, XIII, 426; orthotype RHOMBUS POLYSPILOS Blkr. Includes RHOMBISCUS Jordan & Snyder.

Citharichthys Bleeker, XIII, 427; orthotype C. CAYENNENSIS Blkr. = C. SPILOPTERUS Günther.

Arnoglossus Bleeker, XIII, 427; tautotype PLEURONECTES ARNOGLOSSUS Bl. & Schn. = PLEURONECTES LATERNA Walbaum.

Platysomatichthys Bleeker, XIII, 426; orthotype PLEURONECTES PINGUIS Fabricius. A synonym of REINHARDTIUS Gill.

Brachyprosopon Bleeker, XIII, 428; orthotype PLEURONECTES MICROCEPHALUS Donovan = P. KITT Walbaum. A synonym of CYNICOGLOSSUS Bon.

Pseudopleuronectes Bleeker, XIII, 428; orthotype PLATESSA PLANA Storer.

Heteroprosopon Bleeker, XIII, 429; orthotype PLEURONECTES CORNUTUS T. & S. A synonym of PLEURONICHTHYS Girard.

757. BLEEKER (1862). *Notices ichthyologiques* (I-X). Versl. Akad. Amsterdam, XIV, 1862, 123-141.

PIETER BLEEKER.

Pseudupeneus Bleeker, 134; orthotype P. PRAYENSIS Blkr.

758. BLEEKER (1862). *Description de quelques espèces nouvelles de Silures de Suriname.* Versl. Akad. Amsterdam, XIV.

PIETER BLEEKER.

Pseudorhamdia Bleeker, 384; orthotype PIMELODUS ASCITA Blkr. (not SILURUS ASCITA L.) = PIMELODUS MACULATUS Lac. A synonym of PIMELODUS Lac. as restricted by Gill and authors generally. Bleeker (1862) limits PIMELODUS to P. BAGRE, allowing it to replace FELICHTHYS Sw. and AILURICHTHYS Baird (as also BAGRE Cuv., Oken).

759. BLEEKER (1862). *Notice sur les genres Parasilurus, Eutropiichthys, Pseudeutropius et Pseudopangasius.* Versl. Akad. Amsterdam, XIV, 1862, 390-399.

PIETER BLEEKER.

Parasilurus Bleeker, 394; orthotype P. JAPONICUS T. & S. = SILURUS ASOTUS L. Same as GLANIS Ag., 1856, not of Gronow, 1854.

Pseudeutropius Bleeker, 398; orthotype P. BRACHYPTERUS Blkr.

Eutropiichthys Bleeker, 398; orthotype E. VACHA Blkr.

Pseudopangasius Bleeker, 399; orthotype P. POLYURANODON Blkr.

760. BLEEKER (1862). *Notice sur les genres Trachelyopterichthys, Hemicetopsis et Pseudocetopsis.* Versl. Akad. Amsterdam, XIV.

PIETER BLEEKER.

Trachelyopterichthys Bleeker, XIV, 402; orthotype T. TÆNIATUS Kner.
Hemicetopsis Bleeker, 403; orthotype CETOPSIS CANDIRA Ag.
Pseudocetopsis Bleeker, 403; orthotype CETOPSIS GOBIOIDES Kner.

761. BLEEKER (1862). *Atlas ichthyologique des Indes Orientales Néerlandaises, publié sous les auspices du gouvernement colonial néerlandais.* Tome II, *Siluroides,* etc.

PIETER BLEEKER.

This notable paper was soon followed by another in which most of these genera occur. This is *Systema Silurorum revisum.* Ned. Tijdschr. Dierk., I, 1863, 77-122.

Pseudancistrus Bleeker, 2; orthotype HYPOSTOMUS BARBATUS Cuv. & Val.
Hemiancistrus Bleeker, 2; orthotype ANCISTRUS MEDIANS Kner.
Parancistrus Bleeker, 2; orthotype HYPOSTOMUS AURANTIACUS Castelnau.
Pseudacanthicus Bleeker, 2; orthotype HYPOSTOMUS SERRATUS Cuv. & Val.
Pseudorinelepis Bleeker, 3; orthotype RINELEPIS GENIBARBIS Cuv. & Val.
Loricariichthys Bleeker, 3; orthotype LORICARIA MACULATA Bloch.
Pseudoloricaria Bleeker, 3; orthotype LORICARIA LÆVIUSCULA Cuv. & Val.
Parahemiodon Bleeker, 3; orthotype P. TYPUS Blkr. A synonym of LORICARIICHTHYS Blkr.
Hemiloricaria Bleeker, 3; orthotype H. CARACASENSIS Blkr.
Pseudohemiodon Bleeker, 3; orthotype HEMIODON PLATYCEPHALUS Kner.
Rineloricaria Bleeker, 3; orthotype L. LIMA Kner.
Hemiodontichthys Bleeker, 4; orthotype H. ACIPENSERINUS Kner.
Oxyloricaria Bleeker, 5; orthotype L. BARBATA Kner.
Rhinodoras Bleeker, III, 5; orthotype OXYDORAS D'ORBIGNYI (Kröyer). A synonym of OXYDORAS.
Lithodoras Bleeker, 5; orthotype DORAS LITHOGASTER Heckel. A synonym of CENTROCHIR Ag.
Platydoras Bleeker, 5; orthotype DORAS COSTATUS L. A synonym of DORAS, as restricted by Günther and Eigenmann, not by Bleeker.
Pterodoras Bleeker, 5; orthotype DORAS GRANULOSUS Val. A syonym of CENTROCHIR Ag.
Acanthodoras Bleeker, 5; orthotype SILURUS CATAPHRACTUS L.
Astrodoras Bleeker, 5; orthotype DORAS ASTERIFRON: Kner. A synonym of CENTROCHIR Ag.
Amblydoras Bleeker, 6; orthotype DORAS AFFINIS Kner.
Brachysynodontis Bleeker, 6; orthotype SYNODONTIS BATENSODA Rüppell.
Pseudosynodontis Bleeker, 6; orthotype SYNODOTIS SERRATUS Rüppell.
Hemisynodontis Bleeker, 6; orthotype PIMELODUS MEMBRANACEUS Geoffroy.
Leiosynodontis Bleeker, 6; orthotype SYN. MACULOSUS (young of SILURUS SCHAL Bl. & Schn.).
Pseudauchenipterus Bleeker, 6; orthotype SILURUS NODOSUS Bloch.
Parauchenipterus Bleeker, 7; orthotype SILURUS GALEATUS L. A synonym of TRACHYCORYSTES Blkr.
Auchenipterichthys Bleeker, 7; orthotype AUCH. THORACATUS Kner.
Hemiarius Bleeker, 7; orthotype CEPHALOCASSIS STORMI Blkr.
Pseudarius Bleeker, 8; orthotype ARIUS ARIUS Cuv. & Val. A synonym of TACHYSURUS Lac. = ARIUS Cuv. & Val.
Diplomystes (Duméril) Bleeker, 8; orthotype ARIUS PAPILLOSUS Cuv. & Val. (after les DIPLOMYSTES Dum.). Spelled DIPLOMYSTAX by Günther, 1864.

Paradiplomystes Bleeker, 8; orthotype Pimelodus coruscans Lichtenstein.

Bagrichthys Bleeker, 9; orthotype B. hypselopterus Blkr.

Pseudobagrichthys Bleeker, 9; orthotype Bagroides macropterus Blkr.

Hemibagrus Bleeker, 9; orthotype Bagrus nemurus Cuv. & Val.

Aspidobagrus Bleeker, 9; orthotype Bagrus gulio Cuv. & Val.

Hypselobagrus Bleeker, 10; orthotype Bagrus macronema Blkr. Identical with Mystus (Gronow) Scopoli, 1763, as restricted by Jordan.

Hemisorubim Bleeker, 10; orthotype Platystoma platyrhynchos Cuv. & Val.

Brachyplatystoma Bleeker, 10; orthotype Platystoma vaillanti Cuv. & Val.

Pseudoplatystoma Bleeker, 10; orthotype Silurus fasciatus L.

Hemiplatystoma Bleeker, 10; orthotype Platystoma tigrinum Cuv. & Val. A synonym of Pseudoplatystoma.

Sorubimichthys Bleeker, 10; orthotype Sorubim jandia Spix.

Platystomatichthys Bleeker, 10; orthotype Platystoma sturio Kner.

Leiarius Bleeker, 10; orthotype A. longibarbis Castelnau.

Pseudariodes Bleeker, 11; orthotype Silurus clarias Bloch, not of Linnæus, after Hasselquist. A synonym of Pimelodus Lac.

Malacobagrus Bleeker, 11; orthotype Pimelodus filamentosus Lichtenstein. Perhaps synonym of Piratinga.

Pirarara (Spix) Bleeker, 11; orthotype Silurus hemiliopterus Bl. & Schn.

Parabagrus Bleeker, 11; orthotype Pimelodus pusillus Ranzani.

Pseudocalophysus Bleeker, 12; orthotype Pimelodus ctenodus Ag. = Calophysus macropterus. A synonym of Calophysus Müller.

Aglyptosternon Bleeker, 12; orthotype Silurus cous L.

Tetranematichthys Bleeker, 14; orthotype Ageniosus quadrifilis Kner.

Psudageneiosus Bleeker, 14; orthotype Ageneiosus brevifilis Cuv. & Val.

Pseudohypophthalmus Bleeker 15; orthotype H. fimbriatus Kner = H. edentulus Spix. A synonym of Hypophthalmus Spix.

Paracetopsis (Guichenot) Bleeker, 16; orthotype P. bleekeri Guich.

Wallago Bleeker, 17; orthotype Silurus attu Bl. & Schn.

Silurodes Bleeker, 17; orthotype S. hypophthalmus Blkr.

Catastoma (Kuhl & Van Hasselt) Bleeker, 28; orthotype Arius nasutus Val, An undefined synonym of Netuma Blkr.

762. BLEEKER (1862). *Beskrivning en afdeeling van eene nieuwe soort van Brama (Abramis).*

Pieter Bleeker.

Brama (Klein) Bleeker, 211; type Cyprinus brama L. Abramis Cuv., not Brama Bloch.

763, 764. COSTA (1862). *(Fossil Fishes.)* Atti Reale Inst. Napoli, VI.

Gabriele Oronzio Costa.

Giffonus Costa, VI, App. 26; orthotype G. deperditus Costa (fossil).

Urocomus Costa, VI, 32; orthotype U. picenus Costa (fossil). Doubtful fragments.

765. (COSTA 1862). *Di un novello genere di pesci Esocetidi.* Ann. Mus. Zool. Univ. Napoli, 1862, I.

Achille Costa (1823-).

Grammiconotus Costa, I, 54; orthotype G. bicolor Costa = Scombresox rondeleti Cuv. & Val. Differs from Scombresox in lacking the air bladder; jaws short.

766. COUCH (1862). *The History of the Fishes of the British Islands.* I.
JONATHAN COUCH.

Polyprosopus Couch, I, 67; orthotype P. RASHLEIGHANUS Couch. = SQUALUS MAXIMUS Gunner. A synonym of CETORHINUS Blainv.

767. DYBOWSKI (1862). *Versuch einer Monographie der Cypriniden Livlands.* Arch. Naturg. Biol. Dorpat (1864, separates in 1862).
BENEDIKT IVAN DYBOWSKI (1834-).

Owsianka Bybowski, 146; orthotype ASPIUS OWSIANKA Cernay = O. CZERNAYI Dybowski = SQUALIUS BILINEATUS Heckel. A synonym of LEUCASPIUS Heckel.

768. GILL (1862). *Notice of a New Species of Hemilepidotus and Remarks on the Group (Temnistiæ) of Which It Is a Member.* Proc. Acad. Nat. Sci. Phila., XIV.

Oncocottus Gill, 13; orthotype COTTUS QUADRICORNIS L.

769. GILL (1862). *On the Subfamily of Argentininæ.* Proc. Acad. Nat. Sci. Phila.
THEODORE GILL.

Retropinna Gill, 14; orthotype ARGENTINA RETROPINNA Rich. = RETROPINNA RICHARDSONI Gill.

Mesopus Gill, 14; orthotype ARGENTINA PRETIOSA Grd. An error for HYPOMESUS; an error at once corrected by Gill. HYPOMESUS should therefore stand.

Hypomesus Gill, 15; orthotype ARGENTINA PRETIOSA Grd. A synonym of MESOPUS Gill, page 14, one or the other being left through defective proof-reading.

770. GILL (1862). *Appendix to the Synopsis of the Subfamily of Percinæ.* Proc. Acad. Nat. Sci. Phila.
THEODORE GILL.

Chorististium Gill, 15; orthotype LIOPROPOMA RUBRA Poey.

Siniperca Gill, 16; orthotype PERCA CHUATSI Basilewsky.

771. GILL (1862). *Notes on the Sciænoids of California.* Proc. Acad. Nat. Sci. Phila., I.

Cirrimens Gill, 17; orthotype UMBRINA OPHIOCEPHALA Jenyns.

Brachydeuterus Gill, 17; orthotype LARIMUS AURITUS Cuv.

Odontoscion Gill, 18; orthotype CORVINA DENTEX Cuv. & Val.

Atractoscion Gill, 18; orthotype OTOLITHUS ÆQUIDENS Cuv. & Val.

Archoscion Gill, 18; orthotype OTOLITHUS ANALIS Jenyns.

Apseudobranchus Gill, 18; orthotype OTOLITHUS TOEROE Cuv. & Val. = CHEILODIPTERUS ACOUPA Lac. A synonym of CYNOSCION Gill.

Isopisthus Gill, 18; orthotype ANCYLODON PARVIPINNIS Cuv. & Val.

772. GILL (1862). *Synopsis of the Family of Cirrhitoids.* Proc. Acad. Nat. Sci. Phila.
THEODORE GILL.

Amblycirrhitus Gill, 105; orthotype CIRRHITES FASCIATUS Cuv. & Val.

Cirrhitopsis Gill, 109; orthotype C. AUREUS T. & S. A synonym of CIRRHITICHTHYS Blkr.

Dactylosargus Gill, 110; orthotype APLOPODACTYLUS ARCIDENS Rich.

Crinodus Gill, 112; orthotype HAPLODACTYLUS LOPHODON Gthr.

Acantholatris Gill, 114; orthotype CHÆTODON MONODACTYLUS Carmichael.

Chirodactylus Gill, 114; orthotype CHEILODACTYLUS ANTONII Cuv. & Val.

Dactylopagrus Gill, 114; orthotype CHEILODACTYLUS CARPONEMUS Cuv. & Val. Called DACTYLOSPARUS on page 117.

Latridopsis Gill, 115; orthotype ANTHIAS CILIARIS Bloch.

Dactylosparus Gill, 117; orthotype CHEILONEMUS CARPONEMUS Cuv. & Val. A synonym of DACTYLOPAGRUS Gill; the two names left through defective proofreading.

Goniistius Gill, 120; orthotype CHEIL. ZONATUS Cuv. & Val.

773. GILL (1862). *On the Limits and Arrangements of the Family of Scombroids.* Proc. Acad. Nat. Sci. Phila.

THEODORE GILL.

Grammatorcynus Gill, 125; orthotype THYNNUS BILINEATUS Rüppell. Misspelled GRAMMATORYCNUS.

Gymnosarda Gill, 125; orthotype THYNNUS UNICOLOR Rüppell.

Orcynopsis Gill, 125; orthotype SCOMBER UNICOLOR Geoffroy St. Hillaire. (Misprinted ORYCNOPSIS.)

Lepidocybium Gill, 125; orthotype CYBIUM FLAVOBRUNNEUM Smith. A synonym of SCOMBEROMORUS Lac.

Acanthocybium Gill, 125; orthotype CYBIUM SARA Bennett.

Thyrsitops Gill, 125; orthotype THYRSITES LEPIDOPOIDES Cuv. & Val.

Eupleurogrammus Gill, 126; orthotype TRICHIURUS MUTICUS Gray.

Zenopsis Gill, 126; orthotype ZEUS NEBULOSUS T. & S.

Cyttopsis Gill, 126; orthotype ZEUS ROSEUS Lowe.

Chondroplites Gill, 126; orthotype STROMATEUS ATOUS Cuv. & Val.

Poronotus Gill, 126; orthotype STROMATEUS TRIACANTHUS Peck.

Hoplocoryphis Gill, 127; orthotype SCHEDOPHILUS MACULATUS Gthr.

Clara Gill, 127; orthotype EQUULA LONGIMANUS Cantor. A synonym of PENTAPRION Blkr.

Psenopsis Gill, 127; orthotype TRACHINOTUS ANOMALUS T. & S.

774. GILL (1862). *Descriptions of New Species of Alepisauroidæ.* Proc. Acad. Nat. Sci. Phila.

THEODORE GILL.

Caulopus Gill, 128; orthotype ALEPIDOSAURUS BOREALIS Gill.

775. GILL (1862). *On the West African Genus Hemichromis,* etc. Proc. Acad. Nat. Sci. Phila.

THEODORE GILL.

Epiplatys Gill, 136; orthotype E. SEXFASCIATUS Gill.

Marcusenius Gill, 139; orthotype MORMYRUS CYPRINOIDES L. Name later, page 444, by some confusion transferred to MORMYRUS ANGUILLOIDES L.

Mormyrodes Gill, 139; orthotype MORMYRUS HASSELQUISTI Geoffroy.

Hyperopisus Gill, 139; orthotype MORMYRUS DORSALIS Geoffroy.

776. GILL (1862). *Catalogue of the Fishes of Lower California . . . Collected by Mr. J. Xantus.* Proc. Acad. Nat. Sci. Phila.

THEODORE GILL.

Lepidaplois Gill, 10; orthotype COSSYPHUS AXILLARIS Cuv. & Val.

Chœrojulis Gill, 142; orthotype JULIS SEMICINCTUS Ayres. A sybstitute for HALICHŒRES Rüppell, preoccupied by HALICHŒRUS; a synonym of HEMIULIS Sw., as restricted by Bonaparte.

Iniistius Gill, 143; orthotype XYRICHTHYS PAVO Cuv. & Val.

Malacocentrus Gill, 143; orthotype XYRICHTHYS TÆNIURUS Cuv. & Val.

Oxycheilinus Gill, 143; orthotype CHEILINUS ARENATUS Cuv. & Val.

Euschistodus Gill, 145; orthotype E. DECLIVIFRONS Gill. A synonym of GLYPHISODON Lac.

777. GILL (1862). *On a New Genus Allied to Aulorhynchus and on the Affinities of the Family Aulorhynchoidæ to Which It Belongs.* Proc. Acad. Nat. Sci. Phila., XIV.

Aulichthys (Brevoort) Gill, 234; orthotype A. JAPONICUS Brevoort.

Acentrachme Gill, 234; orthotype AMPHISILE SCUTATA Cuv. = CENTRISCUS SCUTATUS L. A synonym of CENTRISCUS L. AMPHISILE (Klein) Gill is the genus ÆOLISCUS Jordan & Starks. AMPHISILE Cuv. (SCUTATUS) is CENTRISCUS.

Orthichthys Gill, 234; orthotype CENTRISCUS VELITARIS Pallas.

Centriscops Gill, 234; orthotype CENTRISCUS HUMEROSUS Rich.

778. GILL (1862). *Remarks on the Relations of the Genera and Other Groups of Cuban Fishes.* Proc. Acad. Nat. Sci. Phila.

THEODORE GILL.

Haliperca Gill, 236; logotype SERRANUS BIVITTATUS Cuv. & Val.

Mentiperca Gill, 236; orthotype SERRANUS LUCIOPERCANUS Poey.

Hypoplectrus Gill, 236; orthotype PLECTROPOMA PUELLA Cuv. & Val.

Hypoplectrodes Gill, 236 (no definition); orthotype PLECTROPOMA NIGRORUBRUM Cuv. & Val. Same as GILBERTIA Jordan & Eigenmann, 1890.

Acanthistius Gill, 236; orthotype PLECTROPOMA SERRATUM Cuv. & Val.

Ocyurus Gill, 236; orthotype SPARUS CHRYSURUS Bloch.

Proamblys Gill, 236; orthotype DIACOPE NIGRA Cuv. = DIACOPE MACOLOR Cuv. & Val. A synonym of MACOLOR Blkr. (1860).

Gonioplectrus Gill, 236 orthotype PLECTROPOMA HISPANUM Cuv. & Val.

Plectroplites Gill, 236; orthotype DATNIA AMBIGUA Rich.

Rhomboplites Gill, 236; orthotype CENTROPRISTES AURORUBENS Cuv. & Val.

Brachyrhinus Gill, 236; orthotype SERRANUS CREOLUS Cuv. & Val. = S. FURCIFER Cuv. & Val. Name preoccupied; replaced by PARANTHIAS Guich. (1868).

Platyinius Gill, 236; orthotype MESOPRION VORAX Poey.

Gonioperca Gill, 236; orthotype SERRANUS ALBOMACULATUS Jenyns. A synonym of PARALABRAX Grd.

Labroperca Gill, 236; orthotype SERRANUS LABRIFORMIS Jenyns. A synonym of EPINEPHELUS Bloch.

Mycteroperca Gill, 236; orthotype SERRANUS OLFAX Jenyns.

Hypoplites Gill, 236; orthotype MESOPRION RETROSPINIS Cuv. & Val.

Evoplites Gill, 236; orthotype MESOPRION POMACANTHUS Blkr.

Schistorus Gill, 237; orthotype SERRANUS MYSTACINUS Poey.

Lioperca Gill, 237; orthotype SERRANUS INERMIS Cuv. & Val. A synonym of DERMATELEPIS Gill.

Rhinoberyx Gill, 237; orthotype RHYNCHICHTHYS BRACHYRHYNCHUS Blkr. A larval form allied to HOLOCENTRUS

Plectrypops Gill, 237; orthotype HOLOCENTRUM RETROSPINIS Guich.

Centroberyx Gill, 238; orthotype BERYX LINEATUS Cuv. & Val.

Synistius Gill, 238; orthotype GERRES LONGIROSTRIS Rüppell.

Nandopsis Gill, 238; orthotype CHROMIS TETRACANTHUS Poey.

Odontoscion Gill, 238; orthotype JOHNIUS DENTEX Cuv. & Val.

Orycnus Gill, 238; orthotype SCOMBER THYNNUS L. A substitute for ORCYNUS Cuv., preoccupied, of which name it was originally a misprint (Cooper); a synonym of THUNNUS South.

Sarothrodus Gill, 238; orthotype CHÆTODON STRIATUS L. Substitute for CHÆTODON L., the name transferred to POMACANTHUS, the first species named by Artedi being a POMACANTHUS.

Prognathodes Gill, 238; orthotype CHELMO PELTA Gthr. (not PROGNATHODUS Owen).

Carangops Gill, 238; orthotype CARANX HETEROPYGUS Poey. A synonym of HEMICARANX Blkr. of the same date. Both are apparently synonyms of ALEPES Sw., 1839.

Trachurops Gill, 238; orthotype SCOMBER PLUMIERI Bloch = SCOMBER CRUMENOPHTHALMUS Bloch.

Remora Gill, 239; orthotype ECHENEIS REMORA L. This adjustment restricts ECHENEIS L. to E. NAUCRATES L. It is earlier than any other and must stand.

Remilegia Gill, 239; orthotype ECHENEIS SCUTATA Gthr.

Phtheirichthys Gill, 239; orthotype ECHENEIS LINEATA Menzies.

Caulolatilus Gill, 240; orthotype LATILUS CHRYSOPS Cuv. & Val.

Lophogobius Gill, 240; orthotype GOBIUS CRISTAGALLI Cuv. & Val.

Dormitator Gill, 240; logotype D. GUNDLACHI Poey.

Gnathypops Gill, 241; logotype OPISTHOGNATHUS MAXILLOSUS Poey.

Lonchopisthus Gill, 241; orthotype OPISTHOGNATHUS MICROGNATHUS Poey.

779. GILL (1862). *Catalogue of the Fishes of Lower California . . . Collected by Mr. J. Xantus.* Part II. Proc. Acad. Nat. Sci. Phila.

THEODORE GILL.

Pomacanthodes Gill, 244; orthotype P. ZONIPECTUS Gill.

Incisidens Gill, 244; orthotype CRENIDENS SIMPLEX Rich.

Opisthistius Gill, 245; orthotype SCIÆNA TAHMEL Forskål.

Orthostæchus Gill, 255; orthotype O. MACULICAUDA Gill.

Microlepidotus Gill, 255; orthotype M. INORNATUS Gill.

Genytremus Gill, 256; orthotype PRISTIPOMA BILINEATUM Cuv. & Val. A section under ANISOTREMUS Gill.

Genyatremus Gill, 256; orthotype DIAGRAMMA CAVIFRONS Cuv. & Val.

Pristocantharus Gill, 256; orthotype PRISTIPOMA CANTHARINUM Jenyns. A synonym of ORTHOPRISTIS Grd.

Nematistius Gill, 258; orthotype N. PECTORALIS Gill.

Eustomatodus Gill, 261; logotype DECAPTERUS KURROIDES Blkr. A synonym of DECAPTERUS Blkr.

Gymneipignathus Gill, 261; orthotype DECAPTERUS MACROSOMA Blkr.

Evepigymnus Gill, 261; orthotype DECAPTERUS HYPODUS Gill.

780. GILL (1862). *Notes on a Collection of the Fishes of California. . . . by Samuel Hubbard.* Proc. Acad. Nat. Sci. Phila.

THEODORE GILL.

Hypocritichthys Gill, 275; orthotype HYPERPROSOPON ANALIS Alex. Agassiz

Brachyistius Gill, 275; orthotype B. FRENATUS Gill.

Oxylebius Gill, 277; orthotype O. PICTUS Gill.

Sebastopsis Gill, 278; orthotype SEBASTES POLYLEPIS Cuv. & Val. A synonym of SCORPÆNODES Blkr.

Eucyclogobius Gill, 279; orthotype GOBIUS NEWBERRYI Grd.

Melanotænia Gill, 280; orthotype ATHERINA NIGRANS Rich.

Melanogrammus Gill, 280; orthotype GADUS ÆGLIFINUS L.

Brachygadus Gill, 280; orthotype GADUS MINUTUS Yarrell. A synonym of TRISOPTERUS Raf., 1814.

781. GILL (1862). *Synopsis of the Species of Lophobranchiate Fishes of Western North America.* Proc. Acad. Nat. Sci. Phila.

THEODORE GILL.

Dermatostethus Gill, 283; orthotype D. PUNCTIPINNIS Gill.

782. GILL (1862). *Note on Some Genera of Fishes of Western North America.* Proc. Acad. Nat. Sci. Phila.

THEODORE GILL.

Sebastichthys Gill, 329; orthotype SEBASTES NIGROCINCTUS Ayres.

Paratractus Gill, 330; orthotype CARANX PISQUETOS Cuv. & Val. = SCOMBER CRYSOS Mitchill. A section under CARANX.

Caularchus Gill, 330; orthotype LEPADOGASTER RETICULATUS Grd. (GOBIESOX MÆANDRICUS Grd.).

Eumicrotremus Gill, 330; orthotype CYCLOPTERUS ORBIS Müller.

Hypsifario Gill, 330; orthotype SALMO KENNERLYI Suckley, a landlocked form of ONCORHYNCHUS NERKA (Walbaum). The genus may be valid, as distinguished by the long and numerous gill-rakers.

Lepidopsetta Gill, 330; orthotype PSETTICHTHYS UMBROSUS Grd.

Hypsopsetta Gill, 330; orthotype PLEURONICHTHYS GUTTULATUS Grd.

Orthopsetta Gill, 330; orthotype PSETTICHTHYS SORDIDUS Grd.

Uropsetta Gill, 330; orthotype HIPPOGLOSSUS CALIFORNICUS Ayres. A synonym of PARALICHTHYS Grd.

Hydrolagus Gill, 331; orthotype CHIMÆRA COLLIEI Lay & Bennett.

Gyropleurodus Gill, 331; orthotype CESTRACION FRANCISCI Grd.

Holorhinus Gill, 331; orthotype RHINOPTERA VESPERTILIO Grd. = MYLIOBATIS CALIFORNICUS Gill. A section under MYLIOBATIS Dum.

Entosphenus Gill, 331; orthotype PETROMYZON TRIDENTATUS Rich.

783. GILL (1862). *Synopsis of the Carangoids of the Eastern Coast of North America.* Proc. Acad. Nat. Sci. Phila.

THEODORE GILL.

Naucratopsis Gill, 441; orthotype SERIOLA GIGAS Gthr.

Halatractus Gill, 442; logotype SERIOLA DUMERILI Cuv. & Val. A substitute for SERIOLA, used in botany; a reason for change no longer recognized.

784. GILL (1862). *Description of a New Generic Type of Mormyroids,* etc. Proc. Acad. Nat. Sci. Phila.

THEODORE GILL.

Isichthys Gill, 443; orthotype I. HENRYI Gill.

Gnathonemus Gill, 444; orthotype MORMYRUS PETERSI Gthr.

785. GILL (1862). *On the Classification of the Families and Genera of the Squali of California.* Proc. Acad. Nat. Sci. Phila.

THEODORE GILL.

Rhinotriacis Gill, 486; orthotype R. HENLEI Gill.

Tropidodus Gill, 489; orthotype CESTRACION PANTHERINUS Val.

Entoxychirus Gill, 496; orthotype SQUALUS UYATO Raf. A synonym of CENTROPHORUS M. & H.

786. GILL (1862). *On the Limits and Affinity of the Family of Leptoscopoids.* Proc. Acad. Nat. Sci. Phila.

THEODORE GILL.

Dactylagnus Gill, 504; orthotype D. mundus Gill.

787. GILL (1862). *Synopsis of the Genera of the Subfamily of Pimelodinæ.* Proc. Boston Soc. Nat. Hist. for 1861 (1862), VIII.
Theodore Gill.

Branchiosteus Gill, 52; orthotype Olyra laticeps McCl.

788. GÜNTHER (1862). *Catalogue of the Fishes in the British Museum.* IV.
Albert Günther.

Lepidozygus Günther, IV, 15; orthotype Pomacentrus tapeinosoma Blkr.

Microspathodon Günther, IV, 35; orthotype Glyphidodon chrysurus Cuv. & Val. Apparently a synonym of Stegastes Jenyns, 1842.

Parma Günther, IV, 57; logotype P. microlepis Gthr.

Tautogolabrus Günther, IV, 89; orthotype Ctenolabrus burgall Gthr. = Labrus adspersus Walbaum.

Trochocopus Günther, IV, 100; logotype T. opercularis Gthr.

Decodon Günther, IV, 101; orthotype Cossyphus püellaris Poey.

Doratonotus Günther, IV, 124; orthotype D. megalepis Gthr.

Cymolutes Günther, IV, 207; logotype Julis prætextatus Q. &. G.

Coridodax Günther, IV, 243; Sparus pullus Forster.

Pseudetroplus (Bleeker) Günther, IV, 266; orthotype Chætodon suratensis Bloch.

Chromis (Cuvier) Günther, IV, 267; logotype Chromis niloticus Cuv., not as restricted to the original tautotype Sparus chromis L. This understanding is that of most modern authors following Gill and Bleeker. C. chromis and C. nioloticus are both included in the Chromis of Cuvier. Chromis Gthr. is a synonym of Tilapia Smith.

Theraps Günther, IV, 284; orthotype T. irregularis Gthr.

Mesonauta Günther, IV, 300; orthotype Heros insignis Heckel.

Petenia Günther, IV, 301; orthotype P. splendida Gthr.

Hygrogonus Günther, IV, 303; orthotype Lobotes ocellatus Ag. A synonym of Astronotus Sw.

Mesops Günther, IV, 311; logotype Geophagus cupido Heckel. Name preoccupied, replaced by Biotodoma Eigenmann & Kennedy, 1903.

Satanoperca Günther, IV, 312; logotype Geophagus acuticeps Heckel.

Uronectes Günther, IV, 325; orthotype Ophidium parrii Ross. Name preoccupied in crustacea, replaced by Lycocara Gill, 1884.

Boreogadus Günther, IV, 336; logotype Gadus fabricii Rich.

Halargyreus Günther, IV, 342; orthotype H. johnsoni Gthr.

Pseudophycis Günther, IV, 350; orthotype Lota breviuscula Rich.

Læmonema Günther, IV, 356; orthotype Phycis yarrelli Lowe.

Haloporphyrus Günther, 358; orthotype Gadus lepidion Risso. Substitute for Lepidion Sw. regarded as preoccupied by Lepidia, 1817.

Xiphogadus Günther IV, 374; orthotype Xiphasia setifer Sw. A needless substitute for Xiphasia Sw. (1839).

Hyperoplus Günther, IV, 384; orthotype Ammodytes lanceolatus Le Sauvage.

Bleekeria Günther, IV, 387; orthotype B. kallolepis Gthr.

Congrogadus Günther, IV, 388; orthotype Machærium subducens, Rich. A substitute for Machærium, preoccupied.

Malaoocephalus Günther, IV, 396; orthotype M. lævis Gthr.

Tephritis Günther, IV, 406; orthotype Pleuronectes sinensis Lac. Name preoccupied, replaced by Tephrinectes Gthr., and later by Velifracta Jordan.

Lepidorhombus Günther, IV, 407; orthotype PLEURONECTES MEGASTOMA Donovan.

Phrynorhombus Günther, IV, 414; orthotype RHOMBUS UNIMACULATUS Risso.

Brachypleura Günther, IV, 419; orthotype B. NOVÆZEELANDIÆ Gthr.

Engyprosopon Günther, IV, 431; RHOMBUS MOGKII Blkr.

Psammodiscus Günther, IV, 457; orthotype P. OCELLATUS Gthr.

Rhombosolea Günther, IV, 458; logotype R. MONOPUS Gthr.

Ammotretis Günther, IV, 458; orthotype A. ROSTRATUS Gthr.

Peltorhamphus Günther, IV, 460; orthotype P. NOVÆZEELANDIÆ Gthr.

Buglossus Günther, IV, 462; orthotype PLEURONECTES VARIEGATUS DONOVAN. A synonym of MICROCHIRUS Bon.

Microbuglossus Günther, IV, 462; orthotype SOLEA HUMILIS Cantor.

Pegusa Günther, IV, 467; logotype SOLEA AURANTIACA Gthr.

Pardachirus Günther, IV, 478; lgootype ACHIRUS MARMORATUS Lac.

Liachirus Günther, IV, 479; orthotype L. NITIDUS Gthr.

Anisochirus Günther, IV, 480; orthotype SYNAPTURA PANOIDES Blkr.

Soleotalpa Günther, IV, 489; orthotype S. UNICOLOR Gthr. A synonym of APIONICHTHYS Kaup.

Ammopleurops Günther, IV, 490; orthotype PLAGUSIA LACTEA Bon. A synonym of SYMPHURUS Raf.

789. GÜNTHER (1862). *Descriptions of New Species of Reptiles and Fishes,* etc.
Proc. Zool. Soc. London.
ALBERT GÜNTHER.

Tyntlastes Günther, 194; orthotype, AMBLYOPUS SAGITTA Gthr.

790. GÜNTHER (1862). *Note on Pleuronectes sinensis Lac.* Ann. Mag. Nat. Hist. X.
ALBERT GÜNTHER.

Tephrinectes Günther, 475; orthotype PLEURONECTES SINENSIS Lac. Substitute for TEPHRITIS Gthr., preoccupied; replaces VELIFRACTA Jordan, a later substitute name.

791. JOHNSON (1862). *Notes on Rare and Little Known Fishes Taken at Madeira.*
Ann. Mag. Nat. Hist.
JAMES YATE JOHNSON.

Pseudomuræna Johnson, 167; orthotype P. MADERENSIS Johnson. A synonym of PRIODONOPHIS Kaup.

Synaphobranchus Johnson, 169; orthotype S. KAUPI Johnson = MURÆNA PINNATA Gronow.

Nesiarchus Johnson, 173; orthotype N. NASUTUS Johnson.

Setarches Johnson, 177; orthotype S. GUNTHERI Johnson.

792. JONES (1862). *(Estheria.)*
THOMAS RYMER JONES (1819-1911).

Estheria Jones, 112; orthotype E. MIDDENDORFFI Jones (fossil).

793. KNER (1862). *Kleinere Beiträge zur Kenntniss der fossilen Fische Oesterreichs.* Sitzb. Akad. Wiss Wien, XLV.
RUDOLF KNER.

Palimphemus Kner, XLV, 490; orthotype P. ANCEPS (fossil).

794. MORRIS & ROBERTS (1862). *On the Carboniferous Limestone of Oreton and Farlow Clee Hills, Shropshire,* etc. Quart. Journ. Geol., XVIII.
JOHN MORRIS; GEORGE E. ROBERTS.

Characodus (Agassiz) Morris & Roberts, XVIII, 99; orthotype C. ANGULATUS Ag. (fossil); name only, defined by Davis, 1883. Regarded by Woodward as a synonym of COPODUS; not CHARACODUS Owen, 1867, earlier in definition.

Ctenopetalus (Agassiz MS.) Morris & Roberts, XVIII, 100; orthotype CTENOPTYCHIUS SERRATUS Ag. (fossil); name only, defined by Davis, 1881. Regarded as a synonym of CTENOPTYCHIUS.

Harpacodus (Agassiz) Morris & Roberts, XVIII, 100; orthotype CTENOPTYCHIUS DENTATUS Ag. (fossil); name only, defined by Davis (1881). Regarded as a synonym of CTENOPTYCHIUS.

Copodus (Agassiz) Morris & Roberts, XVIII, 100; logotype PSAMMODUS CORNUTUS Ag. (fossil); name only, defined by Davis, 1883.

Deltodus (Agassiz) Morris & Roberts, XVIII, 100; orthotype PŒCILODUS SUBLÆVIS (Ag.) McCoy (fossil).

Deltoptychius (Agassiz) Morris & Roberts XVIII, 100; orthotype COCHLIODUS ACUTUS (Ag.) McCoy (fossil).

Xystrodus (Agassiz) Morris & Roberts, XVIII, 101; orthotype COCHLIODUS STRIATUS Ag. (fossil). Name preoccupied (Plieninger, 1860), replaced by PLATYXYSTRODUS Hay (1899).

Lobodus (Agassiz) Morris & Roberts, XVIII, 101; logotype L. PROTOTYPUS Ag. (fossil); name only, defined by Davis, 1883. Regarded as a synonym of COPODUS.

Mesogomphus (Agassiz) Morris & Roberts, XVIII, 101; orthotype M. LINGUA Ag. (fossil); name only, defined by Davis, 1883. Regarded as a synonym of COPODUS.

Pleurogomphus (Agassiz) Morris & Roberts, XVIII, 101; orthotype P. AURICULATUS Ag. (fossil); name only, defined by Davis, 1883. Regarded as a synonym of COPODUS.

Mylax (Agassiz) Morris & Roberts, XVIII, 101; orthotype M. BATOIDES Ag. (fossil); name only, defined by Davis, 1883. Regarded as a synonym of COPODUS.

Tomodus (Agassiz) Morris & Roberts, XVIII, 101; orthotype T. CONVEXUS (Ag.) (fossil); name only, defined by Davis, 1883 (not TOMODUS Trautschold, 1879), later called OXYTOMODUS Trautschold, 1880.

Streblodus (Agassiz) Morris & Roberts, XVIII, 101; orthotype COCHLIODUS OBLONGUS (Agassiz) Portlock (fossil).

Psephodus (Agassiz) Morris & Roberts, XVIII, 101; orthotype COCHLIODUS MAGNUS Portlock (fossil).

Petalorhynchus Agassiz) Morris & Roberts, XVIII, 101; orthotype PETALODUS PSITTACINUS (Ag.) McCoy (fossil); name only, defined by Davis, 1881.

795. VALENCIENNES (1862). *Description de quelques espèces de poisson . . . envoyés de Bourbon par M. Morel.* Comptes Rendus, LIV.

ACHILLE VALENCIENNES.

This little paper of Valenciennes has been overlooked by writers. In it are described two species of IREX (ELAGATIS), I. INDICUS from Bourbon Island and I. AMERICANUS from St. Thomas, the former with D. VI-I, 24-2, the latter D. VI-I, 22-2. Günther counts D. VI-I, 25-1 in ELAGATIS BIPINNULATUS from Amboyna. Poey counts D. VI-I, 26-2 in ELAGATIS PINNULATUS from Havana. In a specimen from Long Island, Jordan and Evermann count D. VI-I, 27-2, regarding all as belonging to one pelagic species.

Irex Valenciennes, 1204; orthotype IREX INDICUS Val. A synonym of ELAGATIS Bennett (1834), same as SERIOLICHTHYS Blkr. (1854) and DECAPTUS Poey (1860).

796. WAGNER (1862). *Monographie der fossilen Fische aus den Lithographischen Schiefern Bayerns.* Abh. Bayer. Akad. Wiss., IX.

ANDREAS WAGNER.

Mesturus Wagner, IX, 338; orthotype M. VERRUCOSUS Wagner (fossil).

797. WINKLER (1862). *Description de quelques nouvelles espèces de poissons fossiles du calcaires lithographique de Solenhofen d'Oeningen.* Nat. Verh. Holl. Maatsch. Wetensch. Haarlem, XVI.

TIBERIUS CORNELIUS WINKLER (1822-1898).

Brachyichthys Winkler, XIV, 47; orthotype B. TYPICUS Winkler (fossil). Should replace EULEPIPOTUS (1868) and HETEROLEPIDOTUS Egert. (1872).

1863

798. BLEEKER (1863). *Mémoire sur les poissons de la côte de Guinée.* Nat. Verh. Holl. Maatsch. Wetsch., 2 Verz. Deel XVIII, 1863, 1-136.

PIETER BLEEKER.

Glaucus (Klein) Bleeker, 14; orthotype (after Klein) SCOMBER GLAUCUS L. A synonym of CÆSIOMORUS Lac.

Melanogenes Bleeker, 36; orthotype M. MACROCEPHALUS Blkr.

Pseudotolithus Bleeker, 59; orthotype P. TYPUS Blkr.

799. BLEEKER (1863). *Description de quelques espèces de poissons . . . de Chine . . . Musée de Leide, par M. G. Schlegel.* Nat Tijdschr. Dierk. Indie, I.

PIETER BLEEKER.

Hemisciæna Bleeker, 141; orthotype COLLICHTHYS LUCIDUS Günther. A synonym of COLLICHTHYS Gthr.

Pseudosciæna Bleeker, 142; orthotype CORVINA AMBLYCEPS Blkr., species named. Same as ARGYROSOMUS Pylaie, 1835. A synonym of SCIÆNA L., as restricted by Cuvier.

800. BLEEKER (1863). *Systema Cyprinoideorum revisum.* Neder. Tijdschr. Dierk., I., 1863, 179-186.

PIETER BLEEKER.

Aplocheilichthys Bleeker, 116; orthotype A. TYPUS Blkr. A synonym of APLOCHEILUS McCl. The numerous genera here defined are also contained in a second paper written at about the same time.

Gobionichthys Bleeker, 156; orthotype GOBIO MICROCEPHALUS Blkr.

Crossocheilichthys Bleeker, 192; orthotype LOBOCHEILOS COBITIS Blkr.

Isocephalus (Heckel) Bleeker, 194; orthotype CYPRINUS BANGON Ham. Same as BANGANA Ham.

Rohitodes Bleeker, 195; orthotype LABEO CEPHALUS Cuv. & Val.

Acra Bleeker, 197; tautotype CYPRINUS ACRA Ham.; orthotype as indicated by Bleeker, CYPRINUS SYRIACUS.

Leptobarbus Bleeker, 202; orthotype L. HOEVENI Blkr.

Cirrhinichthys Bleeker, 202; orthotype C. DUSSUMIERI.

Opsariichthys Bleeker, 203; orthotype LEUCISCUS UNCIROSTRIS T. & S.; also under No. 805, p. 263.

Paraphoxinus Bleeker, 209; orthotype PHOXINELLUS ALEPIDOTUS Heckel. A synonym of PHOXINELLUS Heckel.

Trachybrama (Heckel) Bleeker, I, 210; orthotype ACANTHOBRAMA MARMID Heckel. A synonym of ACANTHOBRAMA Heckel.

Paracheilognathus Bleeker, 213; orthotype CAPOËTA RHOMBEA T. & S.

Pseudoperilampus Bleeker, 214; orthotype P. TYPUS Blkr.

801. BLEEKER (1863). *Onzième notice sur la faune ichthyologique de l'île d'Obi.* Neder. Tijdschr. Dierk., I, 1863, 228-238.

PIETER BLEEKER.

Paramia Bleeker, 233; orthotype CHEILODIPTERUS LINEATUS Lac. A substitute for CHEILODIPTERUS (Lac.) Cuv., which name he transfers to the genus called TEMNODON Cuv. (POMATOMUS Lac.) because the first species named belongs to POMATOMUS. A synonym of CHEILODIPTERUS as now restricted.

Rhombotides (Klein) Bleeker, 235; orthotype CHÆTODON TRIOSTEGUS L. A synonym of HEPATUS Gronow or TEUTHIS L., as restricted.

Parapercis Bleeker, 236; orthotype SCIÆNA CYLINDRICA Bloch.

Parupeneus Bleeker, 342; orthotype MULLUS BIFASCIATUS Lac. A synonym of UPENEUS Cuv., as first restricted by Bleeker.

802. BLEEKER (1863). *Septième mémoire sur la faune ichthyologique de l'île Timor.* Neder. Tijdschr. Dierk., I 1863, 262-276.

PIETER BLEEKER.

Paradules Bleeker, 267; orthotype DULES RUPESTRIS Cuv. & Val. A synonym of KUHLIA Gill.

Pseudechidna Bleeker, 272; orthotype MURÆNA BRUMMERI Blkr. (STROPHIDON Gthr., not of McClelland).

803. BLEEKER (1863). *Sur les genres de la famille des Cobitioïdes.* Versl. Akad. Amsterdam, XV, 1863, 32-44.

PIETER BLEEKER.

Paracobitis Bleeker, 37; orthotype COBITIS MALAPTERURA Cuv. & Val.

Lepidocephalichthys Bleeker, 42; orthotype COBITIS HASSELTI Cuv. & Val.

803A. BLEEKER (1863). *Systema silurorum revisum.* Neder. Tijdschr. Dierk. I.

PIETER BLEEKER.

Pseudopimelodus Bleeker, I, 101; orthotype PIMELODUS RANINUS Cuv. & Val.

804. BLEEKER (1863). *Deuxième notice sur la faune ichthyologique de l'île de Flores.* Neder. Tijdschr. Dierk., I, 1863, 248-252.

PIETER BLEEKER.

Eurypegasus Bleeker, 250; orthotype PEGASUS DRACONIS L. = P. VOLITANS L. A synonym of PEGASUS L.

805. BLEEKER (1863). *Notice sur les noms de quelques genres de la famille des Cyprinoides.* Versl. Akad. Amsterdam, XV, 1863, 261-264.

PIETER BLEEKER.

Carpionichthys Bleeker, 262; orthotype CYPRINUS CARPIO L. A synonym of CYPRINUS L.

Paraschizothorax Bleeker, 262; orthotype SCHIZOTHORAX HUGELI Heckel.

806. COOPER (1863). *On New Genera and Species of California Fishes.* 4 articles. Proc. Cal. Acad. Sci.

JAMES GRAHAM COOPER (1830-).

Dekaya Cooper, 72; orthotype D. ANOMALA Cooper. A synonym of CAULOLATILUS Gill; the name DEKAYIA already used.

Ayresia Cooper, 73; orthotype A. PUNCTIPINNIS Cooper.

Orycnus Cooper, 77; orthotype SCOMBER THYNNUS L. Originally a slip of the pen for ORCYNUS, offered as a substitute for ORCYNUS, twice preoccupied. A synonym of THUNNUS.

Gibbonsia Cooper, III, 108; orthotype MYXODES ELEGANS Cooper.

Gillichthys Cooper, 109; orthotype G. MIRABILIS Cooper.

807. DOÛMET (1863). *Description d'un nouveau genre de poissons de la Mediteronnée.* Rev. Mag. Zool., XV.

P. NAPOLÉON DOUMET-ADANSON.

Trachelocirrus Doûmet, XV, 212; orthotype T. MEDITERRANEUS Doûmet. A synonym of PSENES Cuv. & Val. Doûmet correctly regards this genus as identical with NAVARCHUS Filippi & Verany. The names CUBICEPS Lowe and ATIMOSTOMA Smith have been also bestowed upon these little pelagic fishes as well as PSENES, the name they should bear.

808. GILL (1863). *(Platygobio.)* Trans. Am. Philos. Soc., V.

THEODORE GILL.

Platygobio Gill, V, 12, 178; orthotype POGONICHTHYS COMMUNIS Grd. = CYPRINUS GRACILIS Rich.

809, GILL (1863). *(Sturgeons.)* Trans. Am. Philos. Soc., V.

THEODORE GILL.

Scaphirhynchops Gill, V, 12, 178; orthotype ACIPENSER PLATORHYNCHUS Raf. Substitute for SCAPHIRHYNCHUS regarded as preoccupied.

810. GILL (1863). *On a New Family Type (Chænopsis) of Fishes Related to the Blennioids.* Ann. Lyc. Nat. Hist. N. Y., VIII.

THEODORE GILL.

Chænopsis Gill, 141; orthotype C. OCELLATUS Poey.

811. GILL (1863). *On a Remarkable New Type of Fishes Allied to Nemophis.* Ann. Lyc. Nat. Hist. N. Y., VIII.

THEODORE GILL.

Plagiotremus Gill, 138; orthotype P. SPILISTIUS Gill.

812. GILL (1863). *Catalogue of the North American Sciænoid Fishes.* Proc. Nat. Acad. Sci. Phila.

THEODORE GILL.

Sciænops Gill, 30; orthotype PERCA OCELLATA L.

813. GILL (1863). *Catalogue of the Fishes of Lower California . . . Collected by Mr. J. Xantus,* Proc. Acad. Nat. Sci., Phila., XV.

THEODORE GILL.

Pronotogrammus Gill, 80 orthotype P. MULTIFASCIATUS Gill.

Lepidamia Gill, 81; orthotype APOGON KALOSOMA Blkr.

Archamia Gill, 81; orthotype APOGON BLEEKERI Gthr.

Glossamia Gill, 82; orthotype APOGON APRION Rich.

Xenichthys Gill, 82; orthotype X. XANTI Gill.
Moronopsis Gill, 82; orthotype DULES MARGINATUS Cuv. & Val. A synonym of KUHLIA Gill.
Rhamphoberyx Gill, 87; orthotype R. PŒCILOPUS Gill. Young form of MYRIPRISTIS Cuv.
Rhombochirus Gill, 88; orthotype ECHENEIS OSTEOCHIR Cuv. & Val.
Remoropsis Gill, 88; orthotype ECHENEIS BRACHYPTERUS Lowe

814. GILL (1863). *Descriptions of Some New Species of Pediculati.* Proc. Acad. Nat. Sci. Phila., XV.
THEODORE GILL.

Pterophryne Gill, 90; orthotype CHIRONECTES LÆVIGATUS Cuv. Name preoccupied; replaced by PTEROPHRYNOIDES Gill, 1878. A synonym of HISTRIO Fischer.
Histiophryne Gill, 90; orthotype CHIRONECTES BOUGAINVILLEI Cuv.
Halieutichthys (Poey) Gill, 90; orthotype H. RETICULATUS Poey = LOPHIUS ACULEATUS Mitchill.

815. GILL (1863). *Descriptive Enumeration of a Collection of Fishes from the Western Coast of Central America . . . by Captain J. M. Dow.* Proc. Acad. Nat. Sci. Phila., XV.
THEODORE GILL.

Ophioscion Gill, 165; orthotype O. TYPICUS Gill.
Amblyscion Gill, 165; orthotype A. ARGENTEUS Gill. A section under LARIMUS Cuv.
Oligoplites Gill, 166; orthotype O. OCCIDENTALIS Gill (not L.) = SCOMBER SAURUS Bl. & Schn.
Chænomugil Gill, 169; orthotype MUGIL PROBOSCIDEUS Gthr. Apparently a synonym of CHELON Röse, 1793.
Rhinomugil Gill, 169; orthotype MUGIL CORSULA Hamilton-Buchanan.
Halophryne Gill, 170; orthotype BATRACHOIDES DIEMENSIS Le Sueur.
Leptarius Gill, 170; orthotype LEPTARIUS DOWI Gill. A synonym of SELENASPIS Blkr.
Notarius Gill, 171; orthotype ARIUS GRANDICASSIS Cuv. & Val. Equivalent to ARIUS Blkr., 1863, not of 1858, and not of Cuvier & Valenciennes.
Urotrygon Gill, 173; orthotype U. MUNDUS Gill.

816. GILL (1863). *On an Unnamed Generic Type Allied to Sebastes.* Proc. Acad. Nat. Sci. Phila., XV.
THEODORE GILL.

Sebastoplus Gill, 208; orthotype SCORPÆNA KUHLI Bowdich.

817. GILL (1863). *Description of a New Generic Type of Ophidioids.* Proc. Acad. Nat. Sci. Phila., XV.
THEODORE GILL.

Leptophidium Gill, 210; orthotype L. PROFUNDORUM Gill. Name preoccupied in snakes. Replaced by LEPOPHIDIUM Gill, 1895.

818. GILL (1863). *Synopsis of the Pomacentroids of the Western Coast of North and Central America.* Proc. Acad. Nat. Sci. Phila., XV.
THEODORE GILL.

Dischistodus Gill, 213; orthotype POMACENTRUS FASCIATUS Cuv. & Val.
Acanthochromis Gill, 214; orthotype DASCYLLUS POLYACANTHUS Blkr.
Pomataprion Gill 216; orthotype HYPSYPOPS DORSALIS Gill. A synonym of MICROSPATHODON Gthr.

819. GILL (1863). *Notes on the Labroids of the Western Coast of North America.* Proc. Acad. Nat. Sci. Phila., XV.

Theodore Gill.

Lepidaplois Gill, 222; orthotype Cossyphus axillaris Cuv. & Val.

Euphysocara Gill, 222; orthotype Cossyphus anthioides Gthr.

Gymnopropoma Gill, 222; orthotype Cossyphus bilunulatus Cuv. & Val. A synonym of Lepidaplois Gill.

Achœrodus Gill, 222; orthotype Cossyphus gouldi Rich.

Dimalacocentrus Gill, 223; orthotype Novacula kallosoma Blkr. A synonym of Novaculichthys Blkr.

Oxyjulis Gill, 223; orthotype Julis modestus Grd.; the name modestus preoccupied in Julis; replaced by Halichœres californicus Gthr.

820. GILL (1863). *Synopsis of the Family of Lepturoids and Description of a Remarkable New General Type.* Proc. Acad. Nat. Sci. Phila., XV.

Theodore Gill.

Evoxymetopon (Poey) Gill, 228; orthotype E. tæniatus Poey.

821. GILL (1863). *Synopsis of the North American Gadoid Fishes.* Proc. Acad. Nat. Sci. Phila.

Brachygadus Gill, 230; orthotype Gadus minutus L. A synonym of Trisopterus Raf.

Micromesistius Gill, 231; orthotype Gadus poutassou Risso. Called Brachymesistius on page 233.

Brachymesistius Gill, 233; orthotype Gadus poutassou Risso. A lapsus for Micromesistius.

Urophycis Gill, 240; orthotype Blennius regius Walbaum.

Rhinonemus Gill, 241; orthotype Gadus cimbrius L.

822. GILL (1863). *Descriptions of the Genera of Gadoid and Brotuloid Fishes of North America.* Proc. Acad. Nat. Sci. Phila., XV.

Theodore Gill.

Leptogadus Gill, 248; orthotype Gadus blennioides Pallas. Perhaps a synonym of Gadiculus Guich.

Odontogadus Gill, 248; orthotype Gadus euxinus Nordmann.

Nematobrotula Gill, 252; orthotype Brotula ensiformis Gthr.

Stygicola Gill, 252; orthotype Lucifuga dentata Poey.

Hoplobrotula Gill, 253; orthotype Brotula armata T. & S.

823. GILL (1863). *Synopsis of the Family of Lycodidæ.* Proc. Acad. Nat. Sci. Phila., XV.

Macrozoarces Gill, 258; orthotype Blennius anguillaris Peck.

824. GILL (1863). *Descriptions of the Gobioid Genera of the Western Coast of Temperate North America.* Proc. Acad. Nat. Sci. Phila., XV.

Theodore Gill.

Pomatoschistus Gill, 263; orthotype Gobius minutus L. Apparently a synonym of Brachyochirus Nardo.

Deltentosteus Gill, 263; orthotype Gobius quadrimaculatus.

Coryphopterus Gill, 263; orthotype C. glaucofrænum Gill. A synonym of Rhinogobius Gill.

Coryphogobius Gill, 263; obviously a lapse for CORYPHOPTERUS.

Pterogobius Gill, 266; orthotype GOBIUS VIRGO T. & S.

Synechogobius Gill, 266; orthotype GOBIUS HASTA T. & S. A synonym of ACANTHOGOBIUS Gill.

825. GILL (1863). *On the Gobioids of the Eastern Coast of the United States,* Proc. Acad. Nat. Sci. Phila., XV.

THEODORE GILL.

Gymnogobius Gill, 269; orthotype GOBIUS MACROGNATHOS Blkr. A synonym of CHÆNOGOBIUS Gill.

Ophiogobius Gill, 269; orthotype GOBIUS OPHIOCEPHALUS Jenyns.

Crystallogobius Gill, 269; orthotype GOBIUS NILSSONI Duben & Koren.

Boreogobius Gill, 269; orthotype GOBIUS STUVITZI Duben & Koren.

Mogurnda Gill, 270; orthotype ELEOTRIS MOGURNDA Rich.

Ophiocara Gill, 270; orthotype ELEOTRIS OPHIOCEPHALUS Cuv. & Val.

Gobiomorphus Gill, 270; orthotype ELEOTRIS GOBIOIDES Cuv. & Val.

Hypseleotris Gill, 270; orthotype ELEOTRIS CYPRINOIDES Cuv. & Val.

Odonteleotris Gill, 270; orthotype ELEOTRIS MACRODON Blkr.

Calleleotris Gill, 270; orthotype ELEOTRIS STRIGATA Cuv. & Val. A synonym of VALENCIENNEA.

Ptereleotris Gill, 271; orthotype ELEOTRIS MICROLEPIS Blkr.

826. GILL (1863). *On the Genus Periophthalmus of Schneider.* Proc. Acad. Nat. Sci. Phila.

THEODORE GILL.

Euchoristopus Gill, 271; orthotype GOBIUS KOELREUTERI Pallas. Replaces PERIOPHTHALMUS of recent authors, of which the logotype is P. SCHLOSSERI.

Boleops Gill, 271; orthotype BOLEOPHTHALMUS AUCUPATORIUS Rich. A synonym of SCARTELAOS Sw.

827. GILL (1863). *Note on the Genera of Hemirhamphinæ.* Proc. Acad. Nat. Sci. Phila., XV.

THEODORE GILL.

Zenarchopterus Gill, 273; orthotype HEMIRAMPHUS DISPAR Cuv. & Val.

Oxyporhampus Gill, 273; orthotype HEMIRAMPHUS CUSPIDATUS Cuv. & Val.

828. GÜNTHER (1863). *On New Species of Fishes from Victoria, South Australia.* Ann. Mag. Nat. Hist., XI.

ALBERT GÜNTHER.

Melambaphes Günther, XI, 115; orthotype GLYPHIDODON NIGRORIS Gthr., not of Cuv. & Val. = M. GUENTHERI Gill.

Rhombosolea Günther, XI, 117; orthotype R. FLESOIDES Gthr.

829. GÜNTHER (1863). *On New Species of Fishes from the Essequibo.* Ann. Mag. Nat. Hist., XII.

ALBERT GÜNTHER.

Helogenes Günther, XII, 443; orthotype H. MARMORATUS Gthr.

Crenuchus Günther, XII, 443; orthotype C. SPILURUS Gthr.

830. JOHNSON (1863). *Description of Three New Genera of Marine Fishes Obtained at Madeira.* Ann. Mag. Nat. Hist., XIV.

JAMES YATES JOHNSON.

Diretmus Johnson, 403; orthotype D. ARGENTEUS Johnson.

Halosaurus Johnson, 407; orthotype H. OWENI Johnson.

Chiasmodon Johnson, 408; orthotype C. NIGER Johnson. Spelled CHIASMODUS by Günther.

831. KAUP (1863). *Einige japanische Fische.* Nederl. Tijdschr. Dierk., I.

JOHANN JACOB KAUP.

Helotosoma Kaup, I, 162; orthotype H. SERVUS Kaup; said to be a synonym of ATYPICHTHYS Gthr.

832. KNER (1863). *Ueber einige fossile Fische aus den Kreide- und Tertiarschichten von Comen und Podsused.* Sitzb. Akad. Wiss. Wien, XLVIII.

RUDOLF KNER.

J. Y. JOHNSON.

Amiopsis Kner, XLVIII, 126; orthotype A. PRISCA Kner (fossil). Fossil homologue of AMIA L.

Scombroclupea Kner, XLVIII, 132; orthotype S. PINNULATA Kner (fossil). The earlier name of this species, CLUPEA MACROPHTHALMA Heckel, 1849, is preoccupied; Ranzani, 1842.

833. KNER & STEINDACHNER (1863). *Neue Beiträge zur Kenntniss der fossilen Fische Oesterreichs.* Denkschr. Akad. Wiss. Wien, XXI.

RUDOLPH KNER; FRANZ STEINDACHNER.

Pseudosyngnathus Kner & Steindachner, XXI, 28; orthotype SYNGNATHUS OPISTHOPTERUS Ag. (fossil).

834. KNER & STEINDACHNER (1863). *Neue Gattungen und Arten von Fischen aus Central-Amerika gesammelt von Prof. Moritz Wagner.* Abh. Münchner. Akad. Wiss., X.

RUDOLPH KNER; FRANZ STEINDACHNER.

Date given by Dean as 1870; Troschel quotes these genera as of 1867; Günther, *Zoological Record,* notes them as previous to 1864.

Saccodon Kner & Steindachner, X, 31; orthotype S. WAGNERI Kner & Steindachner.

Pseudochalceus Kner & Steindachner, X, 31; orthotype P. LINEATUS Kner & Steindachner.

Chalcinopsis Kner & Steindachner, X, 31; logotype C. STRIATULUS Kner & Steindachner. A synonym of BRYCON M. & T., not CHALCINOPSIS Holmberg, 1891, which is PSEUDOCORYNOPOMA.

835. MACKIE (1863). *On a New Species of Hybodus from the Lower Chalk.* The Geologist, VI.

SAMUEL JOSEPH MACKIE

Nemacanthus Mackie, VI, 243 (orthotype ACRODUS KEUPERIANUS Murchison & Strickland (fossil). A synonym of ACRODUS; name preoccupied, 1837.

836. VON DER MARCK (1863). *Fossile Fische, Krebse und Pflanzen aus dem Plattenkalk der jüngsten Kreide in Westphalen.* Palæontographica, XI, Cassel.

W. VON DER MARCK.

Macrolepis von der Marck, XI, 26; orthotype M. ELONGATUS Marck (fosil).

Rhabdolepis von der Marck, XI, 26; orthotype R. CRETACEUS Marck (fossil). Name preoccupied; replaced by HOLCOLEPIS von der Marck, 1868.

Palæolycus von der Marck, XI, 31; orthotype P. DREGINENSIS Marck (fossil).

Scrobodus (Münster) von der Marck, XI, 38; orthotype S. SUBOVATUS Münster (fossil). A synonym of LEPIDOTES.

Microcœlia von der Marck, XI, 48; orthotype M. GRANULATA Marck (fossil).

Leptosomus von der Marck, XI, 49; orthotype L. GUESTPHALICUS Marck (fossil). (Name several times preoccupied.)

Tachynectes von der Marck, XI, 51; logotype T. MACRODACTYLUS Marck (fossil).

Enchelurus von der Marck, XI, 58; orthotype E. VILLOSUS Marck (fossil).

Leptotrachelus von der Marck, XI, 59; orthotype L. ARMATUS Marck (fossil).

837. PUTNAM (1863). *List of the Fishes Sent by the Museum in Exchange,* etc.
Bull. Mus. Comp. Zool. Harvard College, I.
FREDERICK WARD PUTNAM (1839-1915).

Nothonotus (Agassiz) Putnam, I, 3; orthotype ETHEOSTOMA MACULATA Kirtland.

Microperca Putnam, I, 4; orthotype M. PUNCTULATA Putnam.

Cottogaster Putnam, I, 4; orthotype BOLEOSOMA TESSELLATUM Thompson, not of Dekay = COTTOGASTER PUTNAMI J. & G.

Pleurolepis (Agassiz) Putnam, I, 5; orthotype ETHEOSTOMA PELLUCIDUM Ag. Name preoccupied; replaced by VIGIL Jordan, 1919.

Anarmostus (Scudder) Putnam, I, 12; logotype DIABASIS FLAVOLINEATUS Desmarest. Name preoccupied; a synonym of HÆMULON Cuv.

Bathystoma (Scudder) Putnam, I, 12; logotype PERCA MELANURA L. = HÆMULON JENIGUANO Poey.

838. SCHAFHÄUTL (1863). *Südbayerns Lethæa Geognostica.*
K. E. SCHAFHÄUTL (1803-1890).

Diaphyodus Schafhäutl, 246; orthotype D. OVALIS Schafhäutl (fossil). A synonym of LABRODON.

839. SIEBOLD (1863). *Die Süsswasserfische von Mitteleuropa.*
CARL THEODOR ERNST VON SIEBOLD (1804-1885).

Abramidopsis Siebold, 117; orthotype A. LEUCKARTI Siebold. Thought to be a hybrid of ABRAMIS and RUTILUS.

Bliccopsis Siebold, 142; orthotype B. ABRAMORUTILUS Siebold. Thought to be a hybrid: BLICCA and RUTILUS.

840. STEINDACHNER (1863). *Ichthyologische Mittheilungen:* V. *Ueber einige Labroiden.* Verh. Zool. Bot. Ges. Wien, XIII.
FRANZ STEINDACHNER.

Cheiliopsis Steindachner, 1113; orthotype C. BIVITTATUS Steind.

841. STEINDACHNER (1863). *Beiträge zur Kenntniss der fossilen Fischfauna Oesterreichs.* Sitz. Akad. Wiss. Wien, XLVII.
FRANZ STEINDACHNER.

Calamostoma Steindachner, XLVII, 133; logotype ACANTHURUS CANOSSÆ Heckel (fossil). Name preoccupied, replaced by AULORHAMPHUS De Zigno, 1887.

842. STEINDACHNER (1863). *Beiträge zur Kenntniss der Sciænoiden Brasiliens mit der Cyprinodonten Mexicos.* Sitz. Akad. Wiss. Wien, XLVIII.
FRANZ STEINDACHNER.

Diplolepis Steindachner, 2; orthotype SCIÆNA SQUAMOSISSIMA Heckel. Name preoccupied; a synonym of PLAGIOSCION Gill.

Pœcilodes Steindachner, XLVIII, 176; orthotype P. BIMACULATUS Steind. Synonym of PSEUDOXIPHOPHORUS Blkr.

843. WAGNER (1863). *Monographie der fossilen Fische aus den lithographischen Schiefern Bayerns.* IX.

ANDREAS WAGNER.

Heterostrophus Wagner, IX, 614; orthotype H. LATUS Wagner (fossil). Printed HETEROSTICHUS in *Ans. Bayr. Akad. Wiss.*, 1860, p. 63. This name is preoccupied.

Plesiodus Wagner, IX, 632; orthotype P. PUSTULOSUS Wagner (fossil). A synonym of LEPIDOTES.

Eurycormus Wagner, IX, 707; orthotype E. SPECIOSUS Wagner (fossil). A synonym of MACROPOMA Ag.

Liodesmus Wagner, IX, 709; orthotype PHOLIDOPHORUS GRACILIS Ag. (fossil).

Macrorhipis Wagner, IX, 723; orthotype PACHYCORMUS MUENSTERI Wagner (fossil). A synonym of IONOSCOPUS.

1864

844. VAN BENEDEN & DE KONINCK (1864). *Notice sur le Palædaphus insignis.* Bull. Roy. Soc. Belge, XVII.

PIERRE J. VAN BENEDEN (1809-1894); L. J. DE KONINCK.

Palædaphus Van Beneden & De Koninck, XVII, 150; orthotype P. INSIGNIS Beneden & Koninck (fossil).

845. BLEEKER (1864). *Notice sur la faune ichthyologique de Siam.* Versl. Akad. Amsterdam, XVI, 1864, 352-358.

PIETER BLEEKER.

Heterobagrus Bleeker, 355; orthotype H. BOCOURTI Blkr.

846. BOCAGE & CAPELLO (1864). *Sur quelque espèces inédites de Squalidæ . . . que frequentent les côtes du Portugal.* Proc. Zool. Soc. London.

JOSÉ VINCENT BARBOZA DU BOCAGE (1823-1907);
FELIX DE BRITO CAPELLO (1838-).

Centroscymnus Bocage & Capello, 263; orthotype C. CŒLOLEPIS Bocage & Capello.

Scymnodon Bocage & Capello, 263; orthotype S. INGENS Bocage & Capello.

847. CANESTRINI (1864). *Studi sui Lepadogaster del Mediterraneo.* Arch. Zool. Anat. Fisiol., III.

GIOVANNI CANESTRINI.

Mirbelia Canestrini, 189; logotype LEPADASTER DECANDOLLII Risso.

848. COCCHI (1864). *Monografia dei Pharyngodopilidæ nuovo famiglia dei pesci Labroidei.* Ann. Mus. Firenze, I.

IGINO COCCHI (1828-).

Egertonia Cocchi, I, 121; orthotype E. ISODONTA Cocchi (fossil).

Pharyngodopilus Cocchi, I, 123; logotype P. CANARIENSIS Cocchi (fossil). A synonym of LABRODON.

Taurinichthys Cocchi, I, 152; orthotype SCARUS MIOCENICUS Michelotti (fossil).

849. COPE (1864). *On a Blind Silurid . . . from Pennsylvania.* Proc. Acad. Nat Sci. Phila.

EDWARD DRINKER COPE (1840-1897).

Gronias Cope, 231; orthotype GRONIAS NIGRILABRIS Cope.

850. COSTA (1864). *(Fossil Fishes.)* Atti, Pontan.
ORONZIO GABRIELE COSTA.

Oenoscopus Costa, VIII, 59; orthotype IONOSCOPUS PETRAROLÆ Costa (fossil). Name a (needless?) substitute for IONOSCOPUS.

Hyptius Costa, 80; orthotype H. SEBASTIANI Costa. A synonym of SAUROPSIDIUM Costa, 1850.

Platycerhynchus Costa, VIII, 98; orthotype P. RHOMBEUS Costa (fossil). An indeterminable ally of BELONOSTOMUS.

851. EGERTON (1864). *On Some Ichthyolites . . . from New South Wales.* Quart. Journ. Geol. Soc., XX.
PHILIE DE MALPAS GREY EGERTON.

Myriolepis Egerton, XX, 3; orthotype M. CLARKEI Egert. (fossil).

Cleithrolepis Egerton, XX, 3; orthotype C. GRANULATUS Egert. (fossil).

852. GILL (1864). *Description of a New Labroid Genus Allied to Trochocopus Gthr.* Proc. Acad. Nat. Sci. Phila., XVI.
THEODORE GILL.

Pimelometopon Gill, 58; orthotype LABRUS PULCHER Ayres.

853. GILL (1864). *Notes on the Nomenclature of Genera and Species of the Family Echeneidoidæ.* Proc. Acad. Nat. Sci. Phila., XVI.
THEODORE GILL.

Leptecheneis Gill, 60; orthotype ECHENEIS NAUCRATES L. A synonym of ECHENEIS L. as restricted by Gill, 1860.

854. GILL (1864). *Critical Remarks on the Genera Sebastes and Sebastodes of Ayres.* Proc. Acad. Nat. Sci. Phila., XVI.
THEODORE GILL.

Sebastomus Gill, 147; orthotype SEBASTES ROSACEUS Grd.

Sebastosomus Gill, 147; orthotype SEBASTES MELANOPS Grd.

855. GILL (1864). *Second Contribution to the Selachology of California.* Proc. Acad. Nat. Sci. Phila., XVI.
THEODORE GILL.

Eugaleus Gill, 148; orthotype SQUALUS GALEUS L. Substitute for GALEUS Cuv., preoccupied by GALEUS Raf. A synonym of GALEORHINUS Blaniv., as restricted by Gill.

Pleuracromylon Gill, 148; orthotype MUSTELUS LÆVIS = GALEUS MUSTELUS Gill. A synonym of MUSTELUS Cuv., not of VALMONT, the last probably not eligible.

856. GILL (1864). *Several Points in Ichthyology.* Proc. Acad. Nat. Sci. Phila., XVI.
THEODORE GILL.

Electrophorus Gill, 151; orthotype GYMNOTUS ELECTRICUS L.

Gymnotes Gill, 152; orthotype GYMNOTUS ÆQUILABIATUS Humboldt. A synonym of STERNOPYGUS M. & T.

Hypopomus Gill, 152; orthotype RHAMPHICHTHYS MULLERI Kaup. Replaces BRACHYRHAMPHICHTHYS Gthr., 1870.

857. GILL (1864). *Notes on the Paralepidoids and Microstomatoids and on Some Peculiarities of Arctic Ichthyology.* Proc. Acad. Nat. Sci. Phila., XVI.

Arctozenus Gill, 188; orthotype PARALEPIS BOREALIS Reinh.

858. GILL (1864.) *Note on the Cyclopteroids of Eastern North America.* Proc. Acad. Nat. Sci. Phila., XVI.

THEODORE GILL.

Eumicrotremus Gill, 190; orthotype CYCLOPTERUS SPINOSUS Müller.

859. GILL (1864). *Synopsis of the Pleuronectoids of California and Northwestern America.* Proc. Acad. Nat. Sci. Phila., XVI.

THEODORE GILL.

Lepidopsetta Gill, 195; orthotype PLATICHTHYS UMBROSUS Grd.

Hypsopsetta Gill, 195; orthotype PLEURONICHTHYS GUTTULATUS Grd.

Metoponops Gill, 198; orthotype M. COOPERI Gill = PSETTICHTHYS SORDIDUS Grd. A synonym of ORTHOPSETTA Gill.

860. GILL (1864). *On the Affinity of Several Doubtful British Fishes.* Proc. Acad. Nat. Sci. Phila., XVI.

THEODORE GILL.

Helminthodes Gill, 203; orthotype OXYBELES LUMBRICOIDES Blkr.

861. GILL (1864). *Note on the Family of Stichæoids.* Proc. Acad. Nat. Sci. Phila., XVI.

Anisarchus Gill, 210; orthotype CLINUS MEDIUS Reinh.

Eumesogrammus Gill, 210; orthotype CLINUS PRÆCISUS Kröyer.

862. GILL (1864). *Synopsis of the Pleuronectoids of the Eastern Coast of North America.* Proc. Acad. Nat. Sci. Phila., XVI.

THEODORE GILL.

Pomatopsetta Gill, 216; orthotype PLATESSA DENTATA Storer = PLEURONECTES PLATESSOIDES Fabricius. A synonym of HIPPOGLOSSOIDES Gottsche.

Lophopsetta Gill, 216; orthotype PLEURONECTES MACULATUS Mitchill.

Liopsetta Gill, 216; orthotype PLATESSA GLABRA Storer.

Myzopsetta Gill, 217; orthotype PLATESSA FERRUGINEA Storer. A synonym of LIMANDA Gotsche.

Chænopsetta Gill, 218; orthotype PLATESSA OCELLARIS Dekay. A synonym of PARALICHTHYS Grd.

Euchalarodus Gill, 221; orthotype E. PUTNAMI Gill, the male of LIOPSETTA GLABRA (Storer). A synonym of LIOPSETTA Gill.

Ancylopsetta Gill, 224; orthotype A. QUADROCELLATA Gill. A synonym of PSEUDORHOMBUS Blkr.

863. GILL (1864). *Synopsis of the Eastern American Sharks.* Proc. Acad. Nat. Sci. Phila., XVI.

THEODORE GILL.

Eugomphodus Gill, 26; orthotype SQUALUS LITTORALIS Mitchill. A synonym of CARCHARIAS Raf.

Platypodon Gill, 264; orthotype CARCHARIS MENISORRAH M. & H.

Isistius Gill, 264; orthotype SCYMNUS BRASILIENSIS Q. & G.

Euprotomicrus Gill, 264; orthotype SCYMNUS LABORDEI M. & H.

Rhinoscymnus Gill, 264; orthotype SCYMNUS ROSTRATUS Risso.

864. GILL (1864). *Review of Holbrook's Ichthyology of South Carolina.* Am. Journ. Sci. Arts, XXXVII.

THEODORE GILL.

Enneacanthus Gill, 92; orthotype POMOTIS OBESUS Grd.

Acantharchus Gill, 92; orthotype CENTRARCHUS POMOTIS Baird.

Hyperistius Gill, 92; orthotype CENTRARCHUS HEXACANTHUS Cuv. A section under POMOXIS Raf.

Mesogonistius Gill, 92; orthotype POMOTIS CHÆTODON Baird.

Chænobryttus Gill, 92; orthotype CALLIURUS MELANOPS Grd. = POMOTIS GULOSUS Cuv. & Val. Misprinted CHÆNOBRYTHUS.

Eucentrarchus Gill, 93; orthotype PERCA IRIDEA Bosc. A substitute for CENTRARCHUS as currently used—not of Cuvier & Valenciennes, which is a synonym of AMBLOPLITES Raf.

865. GRAY (1864). *Notice of a Portion of a New Form of Animal (Myriosteon higginsi) Probably Indicating a New Group of Echinodermata.* Proc. Zool. Soc. London.

JOHN EDWARD GRAY.

Myriosteon Gray; orthotype M. HIGGINSI Gray; a tube from a rostral cartilage of PRISTIS, supposed to be an echinoderm. A synonym of PRISTIS Latham.

866. GUICHENOT (1864). *L. Maillard: Notes sur l'île de la Réunion.* Fauna Ichthiologique.

ALPHONSE GUICHENOT.

Glyphodes Guichenot, 3; orthotype G. APRIONOIDES Guich. Name preoccupied in LEPIDOPTERA.

Cotylopus Guichenot (appendix) 10; logotype C. ACUTIPINNIS Guich.

867. GÜNTHER (1864). *Catalogue of the Fishes in the British Museum.* V.

ALBERT GÜNTHER.

Copiodoglanis Günther, V, 25; logotype PLOTOSUS TANDANUS Mitchill. A synonym of TANDANUS Mitchill.

Amphilius Günther, V, 115; orthotype PIMELODUS PLATYCHIR Gthr.

Notoglanis Günther, V, 136; haplotype PIMELODUS MULTIRADIATUS Kner = P. ARAKAIMA Schomburgk. A section under RHAMDIA.

Euclyptosternum Günther, V, 180; orthotype SILURUS COUS L. A substitute for AGLYPTOSTERNON Blkr., 1863, the thorax having a sucking disk, which Bleeker's name would deny. The change is not admissible.

Diplomystax Günther, V, 180; orthotype ARIUS PAPILLOSUS Cuv. & Val. An emendation of DIPLOMYSTES Blkr.

Paradiplomystax Günther, V, 180; orthotype PIMELODUS CORUSCANS Lichtenstein. An emendation of PARADIPLOMYSTES Blkr.

Rhinoglanis Günther, V, 216; orthotype R. TYPUS Gthr.

Cnidoglanis Günther, V, 217; logotype PLOTOSUS MEGASTOMUS Rich.

Callomystax Günther, V, 218; orthotype PIMELODUS GAGATA Ham. = GAGATA AYPUS Blkr. An unwarranted substitute for GAGATA Blkr., incorrectly defined. A synonym of BATASIO Blyth.

Stygogenes Günther, V, 223; orthotype S. HUMBOLDTI Gthr. Perhaps a synonym of CYCLOPIUM Sw.

Scleromystax Günther, V, 225; orthotype CALLICHTHYS BARBATUS Q. & G.

Liposarcus Günther, V, 234; logotype HYPOSTOMUS MULTIRADIATUS Hancock.

Cochliodon (Heckel) Günther, V, 238; tautotype HYPOSTOMUS COCHLIODON Kner.

Heterythrinus Günther, V, 283; orthotype ERYTHRINUS SALMONEUS Gronow. A synonym of ERYTHRINUS (Gronow) Scopoli.

Cænotropus Günther, V, 297; orthotype CITHARINUS CHILODUS Cuv. & Val. = CHILODUS PUNCTATUS M. & T. A substitute for CHILODUS M. & T. and MICRODUS Kner, both names preoccupied.

Brachyalestes Günther, V, 314; logotype MYLETES NURSE Rüppell.

Hemibrycon Günther, V, 318; haplotype TETRAGONOPTERUS POLYODON Gthr.

Creatochanes Günther, V, 318; logotype SALMO MELANURUS Bloch.

Scissor Günther, V, 331; orthotype S. MACROCEPHALUS Gthr.

Creagrutus Günther, V, 339; orthotype LEPORINUS MUELLERI Gthr.

Anacyrtus Günther, V, 345; logotype SALMO GIBBOSUS L. Substitute for EPICYRTUS, preoccupied.

Rœstes Günther, V, 345; orthotype CYNOPOTAMUS MOLOSSUS Kner.

Rœboides Günther, V, 345; logotype ANACYRTUS GUATEMALENSIS Gthr.

Hystricodon Günther, V, 349; orthotype EXODON PARADOXUS M. & T. = EPICYRTUS EXODON Cuv. & Val. A substitute for EXODON M. & T., said to be preoccupied.

Sarcodaces Günther, V, 353; orthotype SALMO ODOË Bloch.

Oligosarcus Günther, V, 353; orthotype O. ARGENTEUS Gthr.

Ichthyborus Günther, V, 364; orthotype I. MICROLEPIS Gthr.

Prototroctes Günther, V, 383; orthotype P. MARÆNA Gthr.

Coccia Günther, V, 387; orthotype GONOSTOMUS OVATUS Cocco. A substitute for ICHTHYOCOCCUS Bon., a name given in honor of Cocco. Such names have "always been considered as a nuisance," hence changed by Günther, an action without warrant under accepted rules.

Notoscopelus Günther, V, 405; logotype LAMPANYCTUS RESPLENDENS Rich. Replaces MACROSTOMA Risso, preoccupied as MACROSTOMUS.

Dasyscopelus Günther, V, 405; orthotype MYCTOPHUM ASPERUM Rich.

Ceratoscopelus Günther, V, 405; orthotype SCOPELUS MADERENSIS Lowe.

Melamphaës Günther, V, 433; orthotype METOPIAS TYPHLOPS Lowe, substitute for METOPIAS, preoccupied.

868. GÜNTHER (1864). *Description of a New Fossil Fish from the Lower Chalk (Folkestone).* Geol. Mag., I.

ALBERT GÜNTHER.

Plinthophorus Günther, I, 115; orthotype P. ROBUSTUS Gthr. (fossil).

869. GÜNTHER (1864). *On Some New Species of Central American Fishes.* Proc. Zool. Soc. London.

ALBERT GÜNTHER.

Microdesmus Günther, 26; orthotype M. DIPUS Gthr.

870. GÜNTHER (1864). *On a New Genus of Pediculate Fish (Melanocetus johnsoni) from the Sea of Madeira.* Proc. Zool. Soc. London.

ALBERT GÜNTHER.

Melanocetus Günther, 301; orthotype M. JOHNSONI Gthr.

871. GÜNTHER (1864). *On a New Generic Type of Fishes Discovered by the Late Dr. Leichardt in Queensland.* Ann. Mag. Nat. Hist.

ALBERT GÜNTHER.

Scleropages Günther, XIV, 195; orthotype S. LEICHARDTI Gthr.

872. GÜNTHER (1864). *Report on a Collection of Reptiles and Fishes Made by Dr. Kirk in the Zambesi and Nyassa Regions* . Proc. Zool. Soc. London.

ALBERT GÜNTHER.

Peletrophus Günther, 314; logotype P. MICROLEPIS Günther.

873. GÜNTHER (1864). *Zoological Record for 1864.*

ALBERT GÜNTHER.

Auchenoglanis Günther, 165; orthotype PIMELODUS BISCUTATUS Geoffroy St. Hilaire. A substitute for AUCHENASPIS Blkr. (not Egerton), preoccupied.

Gillia Günther, 157; orthotype GILLICHTHYS MIRABILIS Cooper. A substitute for GILLICHTHYS, deemed "barbarous."

874. JÄCKEL (1864). *Die Fische Bayerns.* Abh. Zool. Min. Ver. Regensburg.

ANDREAS JOHANNES JÄCKEL.

Scardiniopsis Jäckel, 101; orthotype S. ANCEPS Jäckel. Supposed to be a hybrid of RUTILUS and SCARDINIUS.

875. KNER (1864). *Specielles Verzeichniss der Kaiserlichen Fregatte "Novara" gesammelten Fische.* Sitzb. Akad. Wiss. Wien, LIII.

RUDOLF KNER.

Pseudomugil Kner, LIII, 543; orthotype P. SIGNIFER Kner.

Chœroplotosus Kner, LIII, 545; orthotype PLOTOSUS LIMBATUS Cuv. & Val.

Silurodon Kner, LIII, 546; orthotype S. HEXANEMA Kner.

876. MARCUSEN (1864). *Die Familie der Mormyren, etc.* Mem. Acad. Sci. St. Petersb., VII.

JOHANN MARCUSEN.

Petrocephalus Marcusen, 1; logotype MORMYRUS BANE Lac.

Phagrus Marcusen, 1; orthotype MORMYRUS DORSALIS Geoffroy St. Hilaire.

877. PETERS (1864). *Ueber einige neue Säugethiere, Amphibien und Fische.* Sitzb. Akad. Wiss. Berlin.

WILHELM PETERS.

Saurenchelys Peters, 397; orthotype S. CANCRIVORA Peters. A synonym of CHLOPSIS Raf.

Diaphanichthys Peters, 399; orthotype D. BREVICAUDUS Peters. Larva, allied to CONGER.

878. POWRIE (1864). *On the Fossiliferous Rock of Forfarshire and Their Contents.* Quart. Journ. Geol., XX.

JAMES POWRIE.

Ictinocephalus (Page) Powrie, XX, 419; orthotype DIPLACANTHUS GRACILIS Egert. (fossil). Listed name only as I. GRANULATUS by Page, *Rept. Brit. Assn.*, 1858, 104.

Euthacanthus Powrie, XX, 425; orthotype E. MACNICOLI Powrie. A synonym of CLIMATIUS Ag.

879. ROMANOWSKY (1864). *Description de quelques restes de poissons fossiles trouvés dans le calcaire carbonifère du gouvernement de Toula.* Bull Soc. Imp. Nat. Moscou, II.

GHENNADI DANILOVICH ROMANOWSKY (= ROMANOVSKII).

Lophodus Romanowsky, XXXVI, 160; logotype L. IRREGULARIS Romanowsky (fossil). Apparently a synonym of PSEPHODUS.

Plintholepis Romanowsky, XXXVII, 169; orthotype P. RETRORSA Romanowsky (fossil).

Sporolepis Romanowsky, XXXVII, 169; logotype S. PYRIFORMIS Romanowsky (fossil).

1865

880. BLEEKER (1865). *Rhinobagrus et Pelteobagrus, deux genres nouveaux de Siluroides de Chine.* Neder. Tijdschr. Dierk., II, 1865, 710.

PIETER BLEEKER.

Rhinobagrus Bleeker, 9; orthotype R DUMERILI Blkr.

Pelteobagrus Bleeker, 9; orthotype SILURUS CALVARIUS Basilewsky = PIMELODUS FULVIDRACO Rich. Replaces FLUVIDRACO Jordan & Starks.

881. BLEEKER (1865). *Paralaubuca, un genre nouveau de Cyprinoïdes de Siam.* Neder. Tijdschr. Dierk., II, 1865, 15-17.

PIETER BLEEKER.

Paralaubuca Bleeker, II, 16; orthotype P. TYPUS Blkr.

882. BLEEKER (1865). *Notices sur quelques genres et espèces de Cyprinoïdes de Chine.* Neder. Tijdschr. Dierk., II, 1865, 28-29.

PIETER BLEEKER.

Parabramis Bleeker, 22; orthotype ABRAMIS PEKINENSIS Basil.

Acanthobrama Bleeker, 25; orthotype A. SINONI Blkr.

Paracanthobrama Bleeker, 23; orthotype P. GUICHENOTI Blkr.

Pseudolaubuca Bleeker, 28; orthotype P. SINENSIS Blkr.

883. BLEEKER (1865). *Poissons inédits indo-archipélaiques de l'ordre des Murènes.* Neder. Tijdschr. Dierk., II, 1865, 55-62.

PIETER BLEEKER.

Brachyconger Bleeker, II, 236; orthotype MURÆNA SAVANNA Cuv. A synonym of CYNOPONTICUS Costa.

Achirophichthys Bleeker, II, 242; orthotype A. TYPUS Blkr. A pparently the young of BRACHYSOMOPHIS.

884. BLEEKER (1865). *Systema Murænorum revisum.* Neder. Tijdschr. Dierk., II, 1865, 113-122.

PIETER BLEEKER.

Paranguilla Bleeker, 113; orthotype ENCHELYOPUS TIGRINUS Ag. (fossil). Name a substitute for ENCHELYOPUS Ag., preoccupied.

Pseudomoringua Bleeker, 114; orthotype MORINGUA LUMBRICOIDEA Rich.

Oxyconger Bleeker, 116; orthotype CONGER LEPTOGNATHUS Blkr.

885. BLEEKER (1865). *Quatrième notice sur la faune ichthyologique de l'île de Bouro.* Neder. Tijdschr. Dierk., II, 1865.

PIETER BLEEKER.

Tetrades Bleeker, 145; orthotype TETRADRACHMUM XANTHOSOMA Blkr. Apparently a lapsus for TETRADRACHMUM.

886. BLEEKER (1865). *Notice sur le genre Paraploactis et description de son espèce type.* Neder. Tijdschr. Dierk., 1865, 168-170.

PIETER BLEEKER.

Paraploactis Bleeker, II, 169; orthotype P. TRACHYDERMA Blkr.

886A. BLEEKER (1865). *Description de quelques espèces de poissons du Japan, du Cap de Bonne Espérance et de Suriname . . . au Musée de Leide.* Neder. Tijdschr. Dierk., II, 250-269.

Parajulis Bleeker, 251; orthotype JULIS PŒCILOPTERUS T. & S. A synonym of HALICHŒRES Rüppell (HEMIULIS Sw.).

887. BLEEKER (1865). *Sixième notice sur la faune ichthyologique de Siam.* Neder. Tijdschr. Dierk., II, 1865, 171-176.

PIETER BLEEKER.

Parastromateus Bleeker, 174; orthotype STROMATEUS NIGER Bloch. A synonym of APOLECTUS Cuv. & Val.

888. BLEEKER (1865). *Énumération des espèces de poissons actuellement connues de l'île de Ceram.* Neder. Tijdschr. Dierk., II, 1865, 182-183.

Solenichthys Bleeker, 183; logotype FISTULARIA PARADOXUS Pallas. A substitute for SOLENOSTOMUS Lac., regarded as preoccupied by SOLENOSTOMUS Gronow; and of Klein, which is a synonym of FISTULARIA L. Later (1873) Bleeker changed SOLENICHTHYS to SOLENOSTOMATICHTHYS.

889. BLEEKER (1865). *Énumeration des espèces de poissons actuellement connues de l'île d'Amboine.* Neder. Tijdschr. Dierk., II, 1865, 270-283.

PIETER BLEEKER.

Paradiodon Bleeker, 271; orthotype DIODON HYSTRIX L., the name DIODON being transferred to DIODON ATINGA, the first species named by Linnæus. A synonym of DIODON L. as now understood.

Pseudalutarius Bleeker, 273; orthotype ALUTERES NASICORNIS T. & S. Name unnecessarily changed to PSEUDALUTERES Blkr., 1866.

Paraplagusia Bleeker, 274; orthotype PLAGUSIA BILINEATA Blkr.

Pseudamia Bleeker, 284; orthotype APOGON POLYSTIGMA Blkr.

890. BLEEKER (1865). *Atlas ichthyologique,* etc. V. *Baudroies, Ostracions,* etc.

PIETER BLEEKER.

Atopomycterus (Kaup) Bleeker, 49; orthotype DIODON NYCTHEMERUS Cuv..

Uranostoma (Bibron) Bleeker, 63; orthotype not stated, passing reference to a manuscript name in the Museum of Paris. (A synonym of SPHEROIDES or of TETRAODON.

Pleuranacanthus (Bibron) Bleeker, 65; orthotype P. ARGENTATUS Bibron = TETRAODON SCELERATUS Forster. A manuscript name in the Museum of Paris, noted by Bleeker in *Synonymy*. Same as PROMECOCEPHALUS Bibron; a synonym of LAGOCEPHALUS Sw.

891. COPE (1865). *Partial Catalogue of the Cold-blooded Vertebrata of Michigan. Supplemental Note on a Peculiar Genus of Cyprinidæ.* Proc. Acad. Nat. Sci. Phila.

EDWARD DRINKER COPE.

Ericymba Cope, 88; orthotype E. BUCCATA Cope.

892. COSTA (1865). *Studi sopra i terrene ad ittioliti delle provincie Napolitane,* etc. Atti Reale Accad. Sci. Napoli.

ORONZIO GABRIELE COSTA.

Heterolepis Costa, II, 4; orthotype (not stated by Woodward) (fossil).

Andreiopleura Costa, II, 27; orthotype A. VETUSTISSIMA Costa (fossil). Called A. ESIMIA (EXIMIA) Costa on page 10.

893. DAY (1865). *The Fishes of Malabar.*

FRANCIS DAY (1829-1889).

Paranandus Day, 130; orthotype CATOPRA MALABARICA. A synonym of PRISTOLEPIS Jerdon (CATOPRA).

Platacanthus Day, 296; orthotype P. AGRENSIS Day. A synonym of LEPIDOCEPHALICHTHYS Blkr.

Brachygramma Day, 304; orthotype B. JERDONI Day. A synonym of AMBLYPHARYNGODON Blkr.

Paradanio (Bleeker) Day, 319; orthotype PERILAMPUS AUROLINEATUS Day. A synonym of DANIO Ham.

894. DUMÉRIL (AUGUSTE) (1865). *Histoire naturelle des poissons ou ichthyologie générale.* Vol. I.
AUGUSTE HENRI ANDRÉ DUMÉRIL.

Paratrygon Duméril, 594; orthotype a specimen from Brazil, identified as TRYGON AIREBA M. & H. = RAJA ORBICULARIS Bl. & Schn., usually regarded as replacing POTAMOTRYGON Garman, 1877, but Eigenmann considers it as the same as DISCEUS Garman.

895. GILL (1865). *Synopsis of the Fishes of the Gulf of St. Lawrence and Bay of Fundy.* Canadian Naturalist, II.
THEODORE GILL.

Stilbius Gill, 262 (18, reprint); orthotype CYPRINUS AMERICANUS Lac. A substitute for STILBE, preoccupied. A synonym of NOTEMIGONUS Raf.

Micristius Gill, 24 (reprint); logotype FUNDULUS ZONATUS Cuv. & Val. A synonym of ZYGONECTES Ag.

896. GILL (1865). *On the Genus Caulolatilus.* Proc. Acad. Nat. Sci. Phila.
THEODORE GILL.

Prolatilus Gill, 66; orthotype LATILUS JUGULARIS Cuv. & Val.

897. GILL (1865). *On the Cranial Characters of Gadus proximus Grd.* Proc. Acad. Nat. Sci. Phila.
THEODORE GILL.

Microgadus Gill, 69; orthotype GADUS PROXIMUS Grd.

898. GILL (1865). *On a New Genus of Serraninæ.* Proc. Acad. Nat. Sci. Phila.
THEODORE GILL.

Trisotropis Gill, 104; orthotype JOHNIUS GUTTATUS Bl. & Schn. = PERCA VENENOSA L.

Enneacentrus Gill, 105; orthotype PERCE PUNCTATA L. A synonym of CEPHALOPHOLIS Bl. & Schn.

Petrometopon Gill, 105; orthotype SPARUS CRUENTATUS Lac.

899. GILL (1865). *On a New Generic Type of Sharks.* Proc. Acad. Nat. Sci. Phila.
THEODORE GILL.

Micristodus Gill, 177; orthotype M. PUNCTATUS Gill. A synonym of RHINEODON Smith.

900. GILL (1865). *Note on the Family of Myliobatoids with Description of a New Species of Aëtobatis.* Ann. Lyc. N. Y., VII.
THEODORE GILL.

Mylorhina Gill, 136; orthotype RHINOPTERA LALANDI M. & H.

Micromesus Gill, 136; orthotype RHINOPTERA ADSPERSA M. & H.

901. GÜNTHER (1865). *Description of a New Characinoid Genus of Fish (Phago loricatus) from West Africa.* Ann. Mag. Nat. Hist., XV.
ALBERT GÜNTHER.

Phago Günther, XV, 3; orthotype P. LORICATUS Gthr.

902, 903. GÜNTHER (1865). *Zoological Record.* II.
ALBERT GÜNTHER.

Herpetoichthys (Smith) Günther, 159; orthotype ERPETOICHTHYS MALABARICUS Smith. Name preoccupied, replaced by CALAMOICHTHYS Smith, 1866.

904. JOHNSON (1865). *Description of a New Genus of Trichuroid Fishes Obtained at Madeira, with Remarks, etc.* Proc. Zool. Soc. London.
JAMES YATE JOHNSON.

Nealotus Johnson, 434; orthotype N. TRIPES Johnson.

905. KNER (1865). *Einige neue Fische,* etc. Anz. Akad. Wiss. Wien.
RUDOLF KNER.

Thysanocheilus Kner, I, 185; orthotype T. ORNATUS Kner, not THYSANOCHILUS Philippi, 1857.

Leius Kner, 186; orthotype L. FEROX Kner. A synonym of ISISTIUS Gill.

906. KNER (1865). *Reise der Oesterreichischen Fregatte "Novara" um die Erde in den Jahren 1857-59, unter . . . B. von Wüllersdorf-Urbain.*
RUDOLPH KNER.

Pseudomugil Kner, 275; orthotype P. SIGNIFER Kner.

Chœroplotosus Kner, 300; orthotype C. DECEMFILIS Kner. A synonym of CNIDOGLANIS Gthr.

Silurodon Kner, 305; orthotype S. HEXANEMA Kner.

Opsarius Kner, 355; orthotype LEUCISCUS PARVUS T. & S. A synonym of PSEUDORASBORA Blkr.

907. KNER (1865). *Psalidostoma, eine neue Characinengattung aus dem Weissen Nil.* Sitzb. Akad. Wiss. Wien. L.
RUDOLPH KNER.

Psalidostoma Kner, L, 99; orthotype P. CAUDIMACULATUM Kner.

908. LANKESTER (1865). *On the British Species of Cephalaspis and the Scotch Pteraspis.* Rept. Brit. Assn. Adv. Sci. for 1864.
EDWIN RAY LANKESTER.

Scaphaspis Lankester, 58; orthotype CEPHALASPIS LLOYDI Ag. (fossil). = CEPHALASPIS ROSTRATUS Ag. A synonym of PTERASPIS Ag.

909. LEIDY (1865). *(Tomodon).* Smithsonian Contributions.
JOSEPH LEIDY.

Tomodon Leidy, XIV, 102; orthotype TOMODON HORRIFICUS Leidy (fossil); originally described as a reptile tooth, hence needlessly replaced by DIPLOTOMODON Leidy, 1868.

910. LIOY (1865). *Sopre alcuni Avanzi di Plagiostomi fossili del Vicentino,* etc. Atti Soc. Ital. Sci. Nat. Milano, VIII.
PAOLO LIOY (1836-).

Uropterina Lioy, VIII, 113; orthotype U. PLATYRHACHIS Lioy (fossil).

Alopiopsis Lioy, VIII, 403; orthotype A. PLEJODON Leidy (GALEUS CUVIERI Ag.) (fossil). A synonym of PROTOGALEUS and SCOLIODON.

Ptericephalina Lioy, 414; orthotype CLUPEA LEPTOSTEA Ag. (fossil). An ally of SPRATELLA Val. (the sprat).

911. MARCK & SCHLÜTER (1865). *Neue Fische und Krebse aus der Kreide von Westphalien.* XV. *Palæontographica.*
W. VON DER MARCK; AUGUST JOSEPH SCHLÜTER (1836-).

Megapus Schlüter, XV, 275; orthotype M. GUESTPHALICUS Schlüter (fossil). A synonym of CHEIROTHRIX.

Telepholis von der Marck, XV, 276; orthotype T. ACROCEPHALUS Marck (fossil).

Dactylopogon von der Marck, XV, 278; orthotype D. GRANDIS Marck (fossil).

Holcolepis von der Marck, XV, 278; orthotype RHABDOLEPIS CRETACEUS Marck (fossil). Replaces RHABDOLEPIS, preoccupied.

Brachyspondylus von der Marck, XV, 283; orthotype B. CRETACEUS Marck (fossil).

Dermatoptychus von der Marck, XV, 287; orthotype D. MACROPHTHALMUS Marck (fossil). A synonym of OSMEROIDES Ag.

Archæogadus von der Marck, XV, 291; orthotype H. GUESTPHALICUS Marck (fossil). A synonym of HALEC Ag.

912. OWEN (1865). *Description of Portions of a Large Extinct Fish (Stereodus) . . . from the Middle Beds of the Maltese Miocene.*
RICHARD OWEN.

Stereodus Owen, II, 147; orthotype S. MELITENSIS Owen (fossil).

913. PETERS (1865). *Ueber eine neue Percoidengattung Plectroperca aus Japan,* etc. Mon. Ber. Akad. Wiss. Berlin.
WILHELM PETERS.

Plectroperca Peters, 121; orthotype P. BERENDTI Peters = P. CHUATSI Basilewsky. A synonym of SINIPERCA Gill.

914. POEY (1865). *Repertorio fisico-natural de la isla de Cuba: Peces Ciegos.*
FELIPE POEY Y ALOY.

Stygicola (Gill) Poey, 116; orthotype LUCIFUGA DENTATUS Poey.

915. SMITH, JOHN ALEXANDER (1865). *Description of Erpetoichthys, a New Genus of Ganoid Fish from Old Calabar,* etc. Edinburg Roy. Phys. Soc.
JOHN ALEXANDER SMITH.

Erpetoichthys Smith, 273; orthotype CALAMOICHTHYS MALABARICUS Smith. Name preoccupied; replaced by CALAMOICHTHYS Smith.

916. TICKELL (1866). *Description of a Proposed New Genus of the Gadidæ.* Journ. Asiat. Soc. Bengal, XXXIV.
S. R. TICKELL.

Asthenurus Tickell, XXXIV, 32; orthotype A. ATRIPINNIS Tickell. A synonym of BREGMACEROS Thompson.

1866

917. BLANCHARD (1866). *Les poissons des eaux douces de la France,* etc.
CHARLES ÉMILE BLANCHARD (1820-1900).

Cyprinopsis Blanchard, 336; orthotype CYPRINUS CARASSIUS L. A synonym of CARASSIUS Nilsson.

918. BLEEKER (1866). *Systema Balistidorum, Ostracionidorum, Gymnodontidorumque revisum.* Neder. Tijdschr. Dierk., III, 1866, 8-10.
PIETER BLEEKER.

Parabalistes Bleeker, 10; orthotype Balistes chrysospilus Blkr.

Pseudobalistes Bleeker, 11; orthotype Balistes flavimarginatus Rüppell.

Pseudomonacanthus Bleeker, 12; orthotype Monacanthus macrurus Blkr.

Paramonacanthus Bleeker, 12; orthotype Monacanthus curtorhynchus Blkr.

Acanthaluteres Bleeker, 13; orthotype Monacanthus peroni Hollard.

Brachaluteres Bleeker, 13; orthotype Aluterius trossulus Rich.

Liomonacanthus Bleeker, 13; orthotype Monacanthus pardalis Rüppell. A synonym of Cantherines Sw.

Pseudaluteres Bleeker, 14; orthotype Aluteres nasicornis T. & S. Originally called Pseudalutarius by Bleeker in 1865.

Paraluteres Bleeker, 14; orthotype Alutarius prionurus Blkr.

Oxymonacanthus Bleeker, 16; orthotype O. chrysospilus Blkr. = Balistes longirostris Bl. & Schn.

Trichodiodon Bleeker, 18; orthotype Diodon pilosus Mitchill. Probably a larval Diodon.

Crayracion (Klein) Bleeker, 18; orthotype C. lævissimus ex terreo rufescens Klein = Tetraodon spengleri Bloch. Probably a synonym of Tetraodon, but Bleeker regards it as a species of Ovoides as now understood.

Acanthostracion Bleeker, 27; orthotype Ostracion quadricornis L.

919. BLEEKER (1866). *Sur les espèces d'Exocet de l'Inde archipélagique.* Neder. Tijdschr. Dierk., III, 1866, 105-129.

Pieter Bleeker.

Parexocœtus Bleeker, III, 126; orthotype Exocœtus mento Cuv. & Val.

920. BLEEKER (1866). *Révision des Hémirhamphes de l'Inde archipélagique.* Neder. Tijdschr. Dierk., III, 1866, 136-170.

Pieter Bleeker.

Hemirhamphodon Bleeker, 118; orthotype Hemirhamphus phaiosoma Blkr.

921. BLEEKER (1866). *Description du Narcacion Polleni, espèce inédite des mers de l'île de la Réunion.* Neder. Tijdschr. Dierk., III, 1866, 171-173.

Pieter Bleeker.

Narcacion (Klein) Bleeker, III, 171; orthotype Raja torpedo L. Equivalent to Torpedo Dum.

922. COSTA (1866). *(Ittiolite.)* Ann. Accad. Aspir. Nat., V.

Gabriele Oronzio Costa.

Lobodus Costa, V, 81; orthotype L. pedemontanus Costa (fossil).

923. GÜNTHER (1866). *Catalogue of Fishes in the British Museum.* VI.

Albert Günther.

Hucho Günther, VI, 125; orthotype Salmo hucho L. = Hucho germanorum Gthr.

Brachymystax Günther, VI, 162; orthotype Salmo coregonoides Pallas.

Luciotrutta Günther, VI, 164; orthotype Salmo mackenziei Rich. A synonym of Stenodus Rich.

Potamorrhaphis Günther, VI, 234; orthotype Belone tæniata Gthr.

Arrhamphus Günther, VI, 276; orthotype A. sclerolepis Gthr.

Fitzroyia Günther, VI, 307; orthotype Lebias multidentata Jenyns.

Characodon Günther, VI, 308; orthotype C. lateralis Gthr.

Limnurgus Günther, VI, 309; orthotype L. variegatus Gthr. A needless substitute for Girardinichthys Blkr., called "barbarous".

Jenynsia Günther, VI, 331; orthotype LEBIAS LINEATA Jenyns; a synonym of FITZROYIA.

Platypœcilus Günther, VI, 350; orthotype P. MACULATUS Gthr.

923A. GÜNTHER (1866). *On the Fishes of the States of Central America,* etc. Proc. Zool. Soc. London.
ALBERT GÜNTHER.

Neetroplus Günther, 603; orthotype N. NEMATOPUS Gthr.

924. HUXLEY (1866). *British Fossils: Crossopterygian Ganoids.* Mem. Geol. Surv. United Kingdom.
THOMAS HUXLEY (1825-1895).

Eurypoma Huxley, 32; orthotype MACROPOMA EGERTONI Ag. (fossil). A synonym of EURYCORMUS and of MACROPOMA.

925. GUICHENOT (1866). *Le Trigle polyommate, nouveau genre de poissons,* (etc.). *Ichthyologie.* Ann. Soc. Maine-et-Loire, IX.
ALPHONSE GUICHENOT.

Hoplonotus Guichenot, IX, 3; orthotype TRIGLA POLYOMMATA Rich. Preoccupied in beetles, 1851; replaced by PTERYGOTRIGLA Waite (1899) and later by OTOHIME Jordan & Starks (1905).

926. GUICHENOT (1866). *Le Zancle centrognathe, nouveau genre de Chétodons.* Ann. Soc. Maine-et-Loire, IX.
ALPHONSE GUICHENOT.

Gnathocentrum Guichenot, IX, 4; orthotype G. CENTROGNATHUM Guich. = CHÆTODON CORNUTUS L. A synonym of ZANCLUS.

927. GUICHENOT (1866). *L'Argentine leioglosse, nouveau genre de Salmonoides.* Ann. Soc. Maine-et-Loire, IX.
ALPHONSE GUICHENOT.

Glossanodon Guichenot, IX, 9; orthotype ARGENTINA LEIOGLOSSA Cuv. & Val.

928. GUICHENOT (1866). *Notice sur un nouveau genre de la famille des Cottoides,* etc. Mem. Soc. Sci. Nat. Cherbourg.
ALPHONSE GUICHENOT.

Agonomalus Guichenot, 252; orthotype ASPIDOPHALUS PROBOSCIDALIS Val.

929. KNER (1866). *Neue Fische aus dem Museum der Herren J. Cæsar Godeffroy & Sohn in Hamburg.* Sitzb. Akad. Wiss. Wien, LIV .
RUDOLPH KNER.

Strabo Kner & Steindachner, LIV, 372; orthotype S. NIGROFASCIATUS K. & S. A synonym of MELANOTÆNIA Gill.

930. KNER (1866). *Die Fische der bituminösen Schiefer von Raibl in Kärnthen.* Sitzb. Akad. Wiss. Wien, LIII.
RUDOLPH KNER.

Graphiurus Kner, LIII, 155; orthotype G. CALLOPTERUS Kner (fossil).

Orthurus Kner, LIII, 163; orthotype O. STURI Kner (fossil).

Megalopterus Kner, LIII, 174; orthotype M. RAIBLIANUS Kner (fossil)

Peltopleurus Kner, LIII, 180; orthotype P. SPLENDENS Kner (fossil).

931. NEWBERRY & WORTHEN (1866). *Descriptions of New Species of Vertetebrates Mainly from the Subcarboniferous Limestones and Coal Measures of Illinois.* Geol. Surv. Ills., II.

JOHN STRONG NEWBERRY; AMOS H. WORTHEN.

Antliodus Newberry & Worthen, II, 33; logotype A. PARVULUS Newberry & Worthen. A synonym of PETALODUS Owen.

Dactylodus Newberry & Worthen, II, 33; logotype D. PRINCEPS Newberry & Worthen (fossil).

Aspidodus Newberry & Worthen, II, 92; logotype PSEPHODUS CRENULATUS St. John & Worthen (fossil). A synonym of PSEPHODUS.

Sandalodus Newberry & Worthen, II, 102; orthotype S. ANGUSTUS Newberry & Worthen. (fossil).

Rinodus Newberry & Worthen, II, 106; orthotype R. CALCEOLUS Newberry & Worthen (fossil). A synonym of PTYCTODUS.

Trigonodus Newberry & Worthen, II, 111; logotype T. MAJOR, Newberry & Worthen (fossil). Apparently a synonym of PSEPHODUS.

Drepanacanthus Newberry & Worthen, II, 120 (fossil); orthotype D. ANCEPS Newberry & Worthen. A synonym of PHYSONEMUS.

932. OWEN (1866). *On a Genus and Species of Sauroid Fish. (Thlattodus suchoides Ow.) from the Kimmeridge Clay of Norfolk.* Geol. Mag.

RICHARD OWEN.

Thlattodus Owen, III, 55; orthotype T. SUCHOIDES Owen (fossil). A synonym of CATURUS.

933. OWEN (1866). *On a Genus and Species of Sauroid Fish (Ditaxiodus impar Ow.) from the Kimmeridge Clay of Culham, Oxfordshire.* Geol. Mag.

RICHARD OWEN.

Ditaxiodus Owen, 107; orthotype D. IMPAR Owen (fossil). A synonym of CATURUS.

934. PETERS (1866). *Mittheilung über Fische, etc.* Mon. Akad. Wiss. Berlin.

WILHELM PETERS.

Auliscops Peters, 510; orthotype A. SPINESCENS Peters = AULORHYNCHUS FLAVIDUS. Gill. A synonym of AULORHYNCHUS Gill.

Labracoglossa Peters, 513; orthotype L. ARGENTEIVENTRIS Peters.

Nematocentris Peters, 516; orthotype N. SPLENDIDA Peters. A synonym of MELANOTŒNIA Gill.

935. PICTET & HUMBERT (1866). *Nouvelles recherches sur les poissons fossiles du Mont Liban.* Arch. Sci. Génève, XXVI.

FRANÇOIS JULES PICTET; A. HUMBERT.

Cheirothrix Pictet & Humbert, 51; orthotype C. LIBANICUS Pictet & Humbert (fossil). Spelled CHIROTHRIX by Woodward.

Solenognathus Picetet & Humbert, 54; orthotype S. LINEOLATUS Pictet & Humbert (fossil). Name preoccupied; same as CHARITOSOMUS von der Marck, 85.

Opisthopteryx Pictet & Humbert, 78; (misprinted OPISTOPTERYX); orthotype MESOGASTER GRACILIS Pictet.

Pseudoberyx Pictet & Humbert, 32; logotype P. SYRIACUS Pictet & Humbert (fossil).

Aspidopleurus Pictet & Humbert, 107; orthotype A. CATAPHRACTUS Pictet & Humbert. A synonym of PRIONOLEPIS Egert.

936. PLAYFAIR (1866). *The Fishes of Zanzibar.*
ROBERT PLAYFAIR.

Tripterodon Plaiyfair, 42; orthotype T. ORBIS Playfair.

937. REINHARDT (1866). *Om trende formentligt ubeskrevne Fisk of Characinernes eller Karpelaxenes familie* Overs. Dansk. Forh. Kjöbenhavn.
JOHANN THEODOR REINHARDT (1816-1882).

Piabina Reinhardt, 49; orthotype P. ARGENTEA Reinh.
Characidium Reinhardt, 56; orthotype C. FASCIATUM Reinh.

938. SCHMIDT (1866). *Ueber Thyestes verrucosus . . . silurische Fischreste auf der Insel Oesel.* Verh. Min. Ges. St. Petersburg.
FRIEDRICH SCHMIDT (1832-1908).

Trematаspis Schmidt, I, 233; orthotype CEPHALASPIS SCHRENKI Pander (fossil). Apparently a synonym of STIGMOLEPIS Pander.

939. SMITH (1866). *Description of Calamoichthys, a New Genus of Ganoid Fish from Old Calabar,* etc. Trans. Roy. Soc. Edinburg, XXIV.
JOHN ALEXANDER SMITH.

Calamoichthys J. A. Smith, V, 654; orthotype HERPETOICHTHYS CALABARICUS Smith. A substitute for HERPETOICHTHYS or ERPETOICHTHYS, preoccupied in eels.

940. STEINDACHNER (1866). *(Richardsonia.)* Sitzb. Akad. Wiss. Wien.
FRANZ STEINDACHNER.

Richardsonia Steindachner, 53; orthotype ARGENTINA RETROPINNA Rich. A synonym of RETROPINNA Gill.

941. STEINDACHNER (1866). *Zur Fischfauna von Port Jackson in Australien.* Sitzb. Akad. Wiss. Wien, LIII.
FRANZ STEINDACHNER.

Schuettea Steindachner, LIII, 449; orthotype S. SCALARIPINNIS Steind.
Heterochœrops Steindachner, LIII, 461; orthotype H. VIRIDIS Steind

942. STEINDACHNER (1866). *Ichthyologischer Bericht ueber eine nach Spanien und Portugal unternomener Reise.* IV. Sitzb. Akad. Wiss. Wien.
FRANZ STEINDACHNER.

Pachychilon Steindachner, LIV, 263; orthotype SQUALIUS PICTUS Heckel & Kner.

943. STEINDACHNER (1866). *Zur Fischfauna Kaschmirs und der benachbarten Landesstreiche.* Verh. Zool. Bot. Ges. Wien, XVI.
FRANZ STEINDACHNER.

Kneria Steindachner, 769; orthotype K. ANGOLENSIS Steind.
Ctenopharyngodon Steindachner, 782; orthotype C. LATICEPS Steind.
Schizopygopsis Steindachner, 786; orthotype S. STOLICZKÆ Steind.
Diptychus Steindachner, 787; orthotype D. MACULATUS Steind.
Ptychobarbus Steindachner, 789; orthotype P. CONIROSTRIS Steind

944. TROSCHEL (1866). *Ein Beitrag zur ichthyologischen Fauna der Insel der Grünen Vorgebirges (Cape Verde Islands).* Arch. Naturg.
FRANZ HERMANN TROSCHEL.

Onychognathus Troschel, 231; orthotype O. CAUTUS Troschel.

945. YOUNG (1866). *On the Affinities of Platysomus and Allied Genera.* Quart. Journ. Geol., XXII.
JOHN YOUNG.

Amphicentrum Young, XXII, 306; orthotype A. GRANULOSUM Young (fossil). A synonym of CHEIRODUS.

Euryosomus Young, XXII, 311; orthotype E. MACRURUS Young (fossil). A synonym of GLOBULODUS.

Mesolepis Young, XXII, 313; logotype M. WARDI Young (fossil).

Cycloptychius Young, 318; orthotype C. CARBONARIUS (Huxley) Young (fossil).

946. YOUNG (1866). *Notice of New Genera of Carboniferous Glyptodipterines.*
Quart. Journ. Geol. Soc., XXII.
JOHN YOUNG.

Rhizodopsis Young, XXII 596; orthotype HOLOPTYCHIUS SAUROIDES Williamson, not of Binney = RHIZODUS GRANULATUS (Ag.), fossil.

Dendroptychius (Huxley) Young, XXII, 601; orthotype HOLOPTYCHIUS SAUROIDES Binney (fossil). Identical with STREPSODUS Young and with page priority.

Strepsodus (Young) XXII, 602; orthotype HOLOPTYCHIUS SAUROIDES Binney (fossil).

Rhomboptychius (Huxley) Young, XXII, 604; orthotype (MEGALICHTHYS INTERMEDIUS Woodw.) (fossil). A synonym of CENTRODUS.

1867

947. COPE (1867). *Description of a New Genus (Phenacobius teretulus) of Cyprinoid Fisches from Virginia.* Proc. Acad. Nat. Sci. Phila.
EDWARD DRINKER COPE.

· **Phenacobius** Cope, 96; orthotype P. TERETULUS Cope.

948. COPE (1867). *On the Distribution of Fresh-water Fishes in the Allegheny Region of Southwestern Virginia.* Journ. Acad. Nat. Sci. Phila.
EDWARD DRINKER COPE.

Hemioplites Cope, 217; orthotype H. SIMULANS Cope. An aberrant specimen of ENNEACANTHUS.

949. COPE (1867). *Synopsis of the Cyprinidæ of Pennsylvania: Supplement on Some New Species of American and African Fishes.* Trans. Amer. Philos. Soc., XIII.
EDWARD DRINKER COPE.

Photogenis Cope, 378; tautotype SQUALIUS PHOTOGENIS Cope = PHOTOGENIS LEUCOPS Cope. P. SPILOPTERUS, a species of the group EROGALA, has been named as type by Jordan, but the tautotype takes precedence.

Cryptosmilia Cope, XIII, 401; orthotype C. LUNA Cope. A synonym of DREPANE Cuv. (ENIXE Gistel).

Enteromius Cope, XIII, 405; orthotype E. POTAMOGALIS Cope.

Sphagomorus Cope, XIII, 407; orthotype HIPPOGLOSSUS ERUMEI Cuv. An ally of PSETTODES Bennett, but with simple, not barbed, teeth.

950. DAY (1867). *On Some New or Imperfectly Known Fishes of Madras.* Proc. Zool. Soc. London.
FRANCIS DAY.

Gogrius Day, 563; orthotype PIMELODUS GOGRA Sykes = GOGRIUS SYKESI Day. A synonym of RITA Blkr.

951. GÜNTHER (1867). *On the Identity of Alepisaurus (Lowe) with Plagyodus (Steller).* Ann. Mag. Nat. Hist., XIX.
ALBERT GÜNTHER.

Plagyodus (Steller, in *Pallas,* 1811) Günther, XIX, 185; orthotype PLAGYODUS (Steller) Pallas = ALEPISAURUS ÆSCULAPIUS Bean. Revival of an old name which may be intenable as mononomial and printed only in the dative case ("PLAGYODONTEM") by its author.

952. GÜNTHER (1867). *Desription of Some Little Known Species of Fishes in . . . the British Museum.* Proc. Zool. Soc. London.
ALBERT GÜNTHER.

Champsodon Günther, 102; orthotype C. VORAX Gthr.

953. GÜNTHER (1867). *On a New Form of Mudfish from New Zealand.* Ann. Mag. Nat. Hist., XX.
ALBERT GÜNTHER.

Neochanna Günther, X, 305; orthotype N. APODA Gthr.

954. GÜNTHER (1867). *Additions to the Knowledge of Australian Reptiles and Fishes.* Ann. Mag. Nat. Hist., XX.
ALBERT GÜNTHER.

Sticharium Günther, XX, 62, orthotype S. DORSALE Gthr.
Notograptus Günther, XX, 63; orthotype N. GUTTATUS Gthr.

955. GÜNTHER (1867). *New Fishes from Gaboon and the Gold Coast.* Ann. Nat. Hist.
ALBERT GÜNTHER.

Gymnallabes Günther, XX, 111; orthotype G. TYPUS Gthr.
Nannocharax Günther, XX, 112; orthotype N. FASCIATUS Gthr.
Xenocharax Günther, XX, 112; orthotype X. SPILURUS Gthr.

956. GUICHENOT (1867). *Notice sur le lophiopside, nouveau genre de poisson de la famille de lophioides,* etc. Mem. Soc. Nat. Sci. Cherbourg, XIII.
ALPHONSE GUICHENOT.

Lophiopsides Guichenot, 21; orthotype LOPHIUS VOMERINUS Cuv. & Val. Distinguished from LOPHIUS by the absence of vomerine teeth; perhaps lost with age.

957. GUICHENOT (1867). *Notice sur le Neosébaste, nouveau genre,* etc. Mem. Soc. Nat. Sci. Cherbourg, XIII.
ALPHONSE GUICHENOT.

Neosebastes Guichenot, XIII, 83; orthotype N. SCORPÆNOIDES Guich.

958. GUICHENOT (1867). *Notice sur le Sériolophe, nouveau genre de poissons de la famille des scombéroides,* etc. Mem. Soc. Nat. Sci. Cherbourg, XIII, 90-95.
ALPHONSE GUICHENOT.

Leptolepis (Van Hasselt) Guichenot, 68; orthotype L. ARGENTEUS Van Hasselt. Name of type only, no definition. Possibly intended for PAMPUS ARGENTEUS; name preoccupied in fossils.
Seriolophus Guichenot, 90; orthotype S. CARANGOIDES Guich. A synonym of NEMATISTIUS Gill.

959. GUICHENOT (1867). *Notice sur le Salarichthys nouveau genre de poissons,* etc. Mem Soc. Nat. Sci. Cherbourg.
ALPHONSE GUICHENOT.

Salarichthys Guichinot, 14; orthotype SALARIAS VOMERINUS Cuv. & Val. = SALARIAS TEXTILIS Q. & G. (Written SALARIICHTHYS by Jordan, 1890.)

960. HUXLEY (1867). *(Fossil Fishes.)* Trans. Royal Irish Society, XXIV.
THOMAS HENRY HUXLEY.

Campylopleuron Huxley & Wright, XXIV, 353 (fossil). Probably a synonym of CTENODUS.

961. JOHNSON (1867). *Description of a New Genus of Spinacidæ Founded on a Shark Obtained at Madeira.* Proc. Zool. Soc. London.
JAMES YATE JOHNSON.

Machephilus Johnson, 713; orthotype M. DUMERILI Johnson = SQUALUS SQUAMOSUS Bonnaterre. A synonym of LEPIDORHINUS Bon.

962. KNER (1867). *Neuer Beitrag zur Kenntniss der fossilen Fische von Comen bei Görz.* LVI. Sitzb. Akad. Wiss. Wien.
RUDOLF KNER.

Hemisaurida Kner, LVI, 172; orthotype H. NEOCOMIENSIS Kner (fossil).

Hemirhynchus Kner, LVI, 182; logotype H. HECKELI Kner (fossil). A synonym of BELONOSTOMUS Ag.

963. KNER (1867). *Nachtrag zu den fossilen Fischen von Raibl.* Sitzb. Akad. Wiss. Wien, LV.
RUDOLF KNER.

Pterygopterus Kner, LV, 722; orthotype P. APUS Kner (fossil). Probably a synonym of THORACOPTERUS.

964. KNER (1867). *(Teleosaurus.)* Sitzb. Akad. Wiss. Wien, LVI.
RUDOLF KNER.

Teleosaurus Kner, LVI, 905; orthotype T. TENUISTRIATUS Kner (fossil). A synonym of SAURORHYNCHUS.

965. KNER (1867). *(Scarostoma.)* Sitzb. Akad. Wiss. Wien.
RUDOLF KNER.

Scarostoma Kner, LVI, 715; orthotype S. INSIGNE Kner. An ally of OPLEGNATHUS Rich., perhaps generically distinct.

966. KREFFT (1867). *Descriptions of Some New Australian Fresh-water Fishes.* Proc. Zool. Soc. London.
GERARD KREFFT.

Mionorus Krefft, 943; orthotype M. LUNATUS Krefft (scales 30). An ally of APOGON (AMIA).

967. LANKESTER (1867). *On Didymaspis, a New Genus of Cephalaspidian Fishes.* Geol. Mag., IV.
EDWIN RAY LANKESTER.

Didymaspis Lankester, IV, 152; orthotype D. GRINDRODI Lank. (fossil).

968. OWEN (1867). *(Dittodus, etc.)* Trans. Odontograph Soc. London, V.
RICHARD OWEN.

Dittodus Owen, V, 325; logotype DITTODUS DIVERGENS Owen (fossil). Probably founded on teeth of ORTHACANTHUS.

Mitrodus Owen, V, 338; orthotype M. QUADRICORNIS Owen (fossil). A synonym of GYRACANTHUS Ag.

Ganacrodus Owen, V, 340; orthotype G. HASTULA Owen (fossil). Probably identical with ELONICHTHYS.

Ageleodus Owen, V, 340; orthotype A. DIADEMA Owen (fossil). Regarded as identical with CALLOPRISTODUS Traquair, 1888, and of earlier date.

Ochlodus Owen, V, 346; orthotype O. CRASSUS Owen (fossil). Probably a synonym of DICRANODUS and ORTHACANTHUS.

Ganolodus Owen, V, 354; logotype G. CRAGGESI Owen (fossil). A synonym of RHIZODOPSIS.

Aganodus Owen, V, 359; logotype A. APICALIS Owen (fossil). A synonym of ORTHACANTHUS (DICRANODUS).

Pternodus Owen, V, 363; orthotype P. PRODUCTUS Owen (fossil). A synonym of ORTHACANTHUS (DICRANODUS).

Sagenodus Owen, V, 365; orthotype S. INEQUALIS Owen (fossil).

Characodus Owen, V, 366; logotype C. CONFERTUS Owen (fossil). A synonym of RHIZODOPSIS, not CHARACODON Gthr., 1866, not CHARACODUS (Ag.) Davis, 1883.

Gastrodus Owen, 370; orthotype G. PRÆPOSITUS Owen (fossil). A synonym of RHIZODOPSIS.

969. POEY (1867). *Revista de los peces descritos par Poey.* In Repertorio Fisico-Natural de la Isla de Cuba.

FELIPE POEY Y ALOY.

Mullhypeneus Poey, II, 160; orthotype UPENEUS FLAVOVITTATUS Poey. A section under UPENEUS Cuv.

970. POEY (1867). *Monografia de las Morenas Cubanas.* Repertorio Fisico-Natural de la Isla de Cuba, II.

FELIPE POEY Y ALOY.

Macrodonophis Poey, II, 251; orthotype M. MORDAX Poey. A synonym of CROTALOPSIS Kaup.

Uranichthys Poey, II, 256; logotype MURÆNA HAVANNENSIS Bl. & Schn. A synonym of OPHICHTHUS Ahl.

Pythonichthys Poey, II, 265; orthotype P. SANGUINEUS Poey.

971. QUENSTEDT (1867). *Handbuch der Petrefacten.*

FRIEDRICH AUGUST VON QUENSTEDT.

Cyclospondylus Quenstedt, Ed. 2, 260; orthotype THRISSOPS MICROPODIUS Ag. (fossil). A synonym of EUTHYONOTUS.

972. SAUVAGE (1867). *Catalogue des poissons des formations sécondaires du Boulonnais.*

HENRI ÉMILE SAUVAGE (1844-).

"Eulepidotæ" Sauvage, 20; a plural term applied to typical species of LEPIDOTES. Not a generic name.

Curtodus Sauvage, II, 53; logotype C. CORALLINUS Sauvage (fossil).

Auluxacanthus Sauvage, II 63; orthotype A. DUTERTREI Sauvage (fossil). A synonym of ISCHYODUS Egert.

973. STEINDACHNER (1867). *Ueber einige neue und seltene Meeresfische aus China.* Sitzb. Akad. Wiss. Wien, LV.

FRANZ STEINDACHNER.

Paramonacanthus Steindachner, LV, 591; orthotype MONACANTHUS KNERI Steind.

Tæniolabrus Steindachner, LV, 713; orthotype T. FILAMENTOSUS Steind. A synonym of TRICHONOTUS.

974. STEINDACHNER (1867). *Ueber einige Fische aus dem Fitzroy-Flusse. bei Rockhampton in Ost-Australien.* Sitzb. Akad. Wiss. Wien, LV.

FRANZ STEINDACHNER.

Lepidoblennius *Steindachner,* LV, 11; orthotype L. HAPLODACTYLUS Steind.

Neosilurus Steindachner, LV, 14; orthotype N. HYRTLI Steind.

975. STEINDACHNER (1867). *Ichthyologische Notizen: Ueber eine neue Gattung und Art der Gruppe, Trypauchenina.* Sitzb. Akad. Wiss. Wien, LV, 1867.

FRANZ STEINDACHNER.

Ctenotrypauchen, Steindachner, LV, 530; orthotype C. CHINENSIS Steind. A synonym of TRYPAUCHENICHTHYS Blkr.

1868

976. BLEEKER (1868). *Troisème notice sur la faune ichthyologique de l'île d'Obi.* Versl. Akad. Amsterdam (2), II, 1868, 275.

PIETER BLEEKER.

Valenciennea Bleeker, 288; haplotype ELEOTRIS HASSELTI Blkr. (ELEOTRIS STRIGATA Cuv. & Val. named in a later paper.) This is the earlier and therefore the proper form of this name, later written VALENCIENNESIA).

977. BLEEKER (1868). *Cinquième notice sur le faune ichthyologique de Solor.* Versl. Akad. Amsterdam, II.

Valenciennesia Bleeker, 275; orthotype ELEOTRIS STRIGATA Cuv. & Val. Earlier written VALENCIENNEA by Bleeker. (See No. 1115, p. 371.)

978. BLEEKER (1868). *Notice sur la faune ichthyologique de l'île de Waigiou.* Versl. Akad. Amsterdam, II.

PIETER BLEEKER.

Tetragonoptrus (Klein) Bleeker, 300; orthotype (after Klein) CHÆTODON CAPISTRATUS L. A syonym of CHÆTODON.

979. BLEEKER (1868). *Description de trois espèces inédites de Chromidoïdes de Madagascar.* Versl. Akad. Amsterdam (2), II, 1868, 307-314.

PIETER BLEEKER.

Paratilapia Bleeker, 308; orthotype P. POLLENI Blkr.

Paretroplus Bleeker, 313; orthotype P. DAMII Blkr.

980. BLEEKER (1868). *Description de trois espèces inédites des poissons des îles d'Amboine et de Waigiou.* Versl. Akad Amsterdam, II.

PIETER BLEEKER.

Heteroconger Bleeker, II, 332; orthotype H. POLYZONA Blkr., 400.

981. BURMEISTER (1868). *Petromyzon macrostomus, description de una nueva especie de pez.* Anales Mus. Pub. Buenos Ayres, I.

HERMANN CARL CONRAD BURMEISTER (1807-1892).

Exomegas Burmeister, I, 36; orthotype PETROMYZON MACROSTOMUS Burmeister.

982. CAPELLO (1868). *Descripção de dos peixes novos provenientês dos mares de Portugal,* etc. Journ. Sci. Math., etc., Lisboa.
FELIX DE BRITO CAPELLO.

Pseudotriakis Capello, 316; orthotype P. MICRODON Capello. Also written PSEUDOTRIACIS.

983. CAPELLO (1868). *Descripção de dos peixes novos provenientês dos mares Lias of Lyme Regis.* Quart. Journ. Geol. Soc., XXIV.
FELIX DE BRITO CAPELLO.

Osteorachis Egerton, XXIV, 500; orthotype O. MACROCEPHALUS Egert. (fossil).

Isocolum Egerton, XXIV, 501; orthotype I. GRANULATUM Egert. (fossil). A synonym of OSTEORACHIIS.

Eulepidotus Egerton, XXIV, 505; orthotype DAPEDIUS FIMBRIATUS Ag. (fossil). Unnecessarily "withdrawn" by Egerton and replaced by HETEROLEPIDOTUS, 1872, on account of the name "EULEPIDOTÆ" applied to typical species of LEPIDOTES by Sauvage, 1867.

984. DAY (1868). *On Some New Fishes from Madras.* Proc. Zool. Soc. London.
FRANCIS DAY.

Priacanthichthys Day, 193; orthotype P. MADERASPATENSIS Day = EPINEPHELUS LATIFACIATUS T. & S. A synonym of EPINEPHELUS.

984A. GEINITZ (1868). *Die fossilen Fischschuppen aus der Planerkalke in Strehlen.* Jahresber. Ges. Natur.- u. Heilkunde Dresden.
HANS BRUNO GEINITZ.

(Reviewed by T. D. A. Cockerell, *American Naturalist,* January, 1917.)

In addition to his own generic names, Geinitz quotes from Dr. Steinla's unpublished *Katalog,* in lit. the definitions, a number of generic names proposed for scales of Cretaceous fishes. For most of these no type is assigned, and most of them appear from Geinitz' account to fall into the rank of synonyms.

Perigrammatolepis (Steinla) Geinitz, 39; orthotypé SALMO LEWESIENSIS Mantell. "Es ist dies normale Form für OSMEROIDES LEWESIENSIS, welche den Abbildungen bei Agassiz am nächsten entspricht." From this I infer that LEWESIENSIS should be considered as type, but Geinitz seems to place PERIGRAMMATOLEPIS in the synonymy of his CYCLOLEPIS (= AULOLEPIS).

Credemnolepis (Steinla) Geinitz, 39; orthotype not stated; name only. Apparently defined on page 48 as CODONOLEPIS. Said to be a synonym of CYCLOLEPIS Geinitz (AULOLEPIS).

Kymatolepis (Steinla) Geinitz, 39; orthotype named K. GEINITZI by Cockerell (1919).

Cyclolepis Geinitz, 39; orthotype C. AGASSIZI Geinitz (fossil). (Scales, like those of SALMO.)

Aspidolepis Geinitz, 40; orthotype A. STEINLAI Geinitz (fossil). (Scales, similar to those of PORONOTUS.)

Dypterolepis (Steinla) Geinitz, 40; orthotype not named. Said to contain part of the species of LEPTOLEPIS Ag. Apparently a synonym of HOLCOLEPIS.

Kymatopetalolepis (Steinla) Geinitz, 40; orthotype not named. Apparently SALMO LEWESIENSIS Mantell. If so, a synonym of HOLCOLEPIS.

Micropetalolepis (Steinla) Geinitz, 40; orthotype not named. Apparently founded on a scale of SALMO LEWESIENSIS Mantell. If so, a synonym of HOLCOLEPIS.

Leptogrammatolepis (Steinla) Geinitz, 40; orthotype not named. Apparently a scale of SALMO LEWESIENSIS. If so, a synonym of HOLCOLEPIS.

Petalolepis (Steinla) Geinitz, 42; orthotype Osmeroides divaricatus Geinitz. Apparently a synonym of Holcolepis.

Mixogrammatolepis (Steinla) Geinitz, 43; orthotype a Cretaceous scale of Cladocyclus strehlensis Geinitz (Beryx ornatus Geinitz), regarded as a synonym of Cladocyclus. But this must be an error, as the South American genus Cladocyclus is quite distinct from these forms found in the British Chalk.

Heliolepis (Steinla) Geinitz, 43; orthotype Cretaceous scale of "Cladocyclus."

Oolepis (Steinla) Geinitz 43; orthotype a Cretaceous scale of "Cladocyclus."

Coinolepis (Steinla) Geinitz, 43; orthotype a Cretaceous scale of "Cladocyclus."

Polypterolepis (Steinla) Geinitz, 43; orthotype a Cretaceous scale of "Cladocyclus."

Ptycholepis (Steinla) Geinitz, 43; orthotype a Cretaceous scale of "Cladocyclus."

Pterogrammatolepis (Steinla) Geinitz, 43; orthotype a Cretaceous scale of "Cladocyclus."

Agrammatolepis (Steinla) Geinitz, 43; orthotype a Cretaceous scale (misspelled Acrammatolepis). Apparently a synonym of Hemicyclus Geinitz.

Crommiolepis (Steinla) Geinitz, 43; orthotype Cretaceous scales referred to Cladocyclus strehlensis Geinitz. "Eine Anzahl kleiner Schuppen von denen ein Theil jedenfalls an Cl. strehlensis gehört. On the rest of these scales Geinitz founds his new genus Hemicyclus. The type of Cladocyclus (C. gardneri Ag.) is a South American Osteoglossid, and none of these fishes of the German Chalk seems related to it.

Hemicyclus Geinitz, 44; orthotype Cladocyclus strehlensis Geinitz, in part (fossil scales).

Prionolepis (Steinla) Geinitz, 45; orthotype Zeus lewesiensis Mantell = Beryx ornatus Ag. Cretaceous scales. Apparently a synonym of Hoplopteryx Ag.

Goniolepis (Steinla) Geinitz, 45; orthotype Cretaceous scales. (Hoplopteryx?)

Hemigonolepis (Steinla) Geinitz, 45; orthotype Cretaceous scales. (Hoplopteryx?)

Hemicyclolepis (Steinla) Geinitz, 45; orthotype Cretaceous scales. (Hoplopteryx?)

Lophoprionolepis (Steinla) Geinitz, 47; orthotype Amia lewesiensis Mantell = Macropoma mantelli Ag., orthotype Cretaceous scales. A synonym of Macropoma Ag.

Acrogrammatolepis Geinitz, 47; orthotype A. steinlai Geinitz (fossil).

Hemilampronites Geinitz, 48; orthotype H. steinlai Geinitz (fossil). (Scales, similar to those of Hyporhamphus.)

The following additional names for Cretaceous scales are also quoted, but I have at present no further data for them:

Psygmatolepis (Steinla) Geinitz, 40; orthotype Cretaceous scales. Misspelled on plate.

Leptogrammatolepis (Steinla) Geinitz, 40; orthotype Cretaceous scales.

Microgrammatolepis (Steinla) Geinitz, 40; orthotype Cretaceous scales.

Codonolepis (Steinla), 48; orthotype not named. Spelled Credemnolepis on page 40. A synonym of Cyclolepis.

985. GÜNTHER (1868). *Catalogue of the Fishes in the British Museum.* VII. Albert Günther.

Osteochilus Günther, VII, 40; logotype Rohita melanopleura Blkr.

Barynotus Günther, VII, 61; logotype B. lagensis Gthr.

Gymnocypris Günther, VII, 169; orthotype G. dobula Gthr.

Megarasbora Günther, VII, 198; orthotype Cyprinus elanga Ham.

Aphyocypris Günther, VII, 201; orthotype A. chinensis Gthr.

Xenocypris Günther, VII, 205; orthotype X. argentea Gthr.

Mystacoleucus Günther, VII, 206; orthotype Systomus padangensis Blkr.

Pteropsarion Günther, VII, 284; orthotype Barilius bakeri Day.

Opsaridium (Peters) Günther, VII, 286; orthotype O. zambezense Peters (MS.). A synonym of Barilius Ham.

Bola Günther, 293; tautotype Cyprinus bola Ham. = Bola goha Gthr. Name preoccupied by Bola Ham.; replaced by Raiamas Jordan, 1919. "Rajah mas" is the angler's name for the type-species in India.

Schacra Günther, VII, 294; orthotype Cyprinus shacra Ham. Same as Shacra Blkr.

Squaliobarbus Günther, VII, 297; orthotype Leuciscus curriculus Rich.

Ochetobius Günther, VII, 297; orthotype Opsarius elongatus Kner.

Eustira Günther, VII, 331; orthotype E. ceylonensis Gthr.

Securicula Günther, VI, 332; logotype Cyprinus gora Ham. A synonym of Salmostoma Sw.

Cachius Günther, VII, 338; orthotype Cyprinus cachius Ham. A synonym of Chela Ham. as restricted by Bleeker, 1863.

Oreonectes Günther, VII, 369; orthotype O. platycephalus Gthr.

Cetengraulis Günther, VII, 383; logotype Engraulis edentulus Cuv.

Pterengraulis Günther, VII, 384; orthotype Clupea atherinoides L.

Heterothrissa Günther, VII, 385; orthotype Engraulis breviceps Cantor.

Lycengraulis Günther, VII, 385; logotype Engraulis grossidens Cuv.

Lycothrissa Günther, VII, 385; orthotype Engraulis crocodilus Blkr.

Telara Günther, VII, 385; tautotype Clupea telara Ham. A synonym of Setipinna Sw.

Pellonula Günther, VII, 452; orthotype P. vorax Gthr.

Chirocentrodon Günther, VII, 463; orthotype C. tæniatus Gthr.

Xenomystus Günther, VII, 481; orthotype Notopterus nigri Gthr.

Graodus Günther, VII, 485; orthotype G. nigrotaeniatus Gthr. A synonym of Alburnops Grd. (the teeth lost).

986. GÜNTHER (1868). *Report on a Collection of Fishes Made at St. Helena by J. C. Melliss,* Esq. Proc. Zool. Soc. London.

Albert Günther.

Holanthias Günther, 226; Anthias fronticinctus Gthr.

987. GÜNTHER (1868). *Descriptions of Fresh-water Fishes from Surinam and Brasil.* Proc. Zool. Soc. London.

Albert Günther.

Hypoptopoma Günther, 234; orthotype H. thoracatum Gthr.

Aphyocharax Günther, 245; orthotype A. pusillus Gthr.

988. GÜNTHER (1868). *Additions to the Ichthyological Fauna of Zanzibar.* Ann. Mag. Nat. Hist.

Albert Günther.

Tholichthys Günther I, 457; orthotype T. osseus Gthr. Larva of Chætodon.

989. GUICHENOT (1868). *Index generum et specierum anthiadidorum,* etc. Ann. Soc. Maine-et-Loire.

ALPHONSE GUICHENOT.

Paranthias Guichenot, X, 87; orthotype SERRANUS CREOLUS Cuv. & Val. = S. FURCIFER Cuv. & Val. Replaces BRACHYRHINUS Gill.

990. HANCOCK & ATTHEY (1868). *Notes on the Remains of Some Reptiles and Fishes from the Shales of the Northumberland Coal-fields.* Trans. Nat. Hist. Soc. Northumberland.

ALBANY HANCOCK (1806-1873); T. ATTHEY.

Acanthodopsis Hancock & Atthey, I, 364; orthotype A. WARDI Hancock & Atthey (fossil).

991. KNER (1868). *Ueber einige Fische aus dem Museum . . . Godeffroy in Hamburg.* Sitzb. Akad. Wiss. Wien.

RUDOLPH KNER.

Anomalops Kner, LVIII, 26; orthotype A. GRÆFFEI Kner.

Sparopsis Kner, LVIII, 27; orthotype S. LATIFRONS Kner. A synonym of APRION Cuv.

Micropus Kner, 28; orthotype MICROPTERYX POLYCENTRUS Kner. Name four times preoccupied; replaced by ORÇUETA Jordan.

Bunocottus Kner, LVIII, 28; orthotype B. APUS Kner.

Orthostomus Kner, LVIII, 29; orthotype O. AMBLYOPINUS Kner.

Opisthocentrus Kner, 49; orthotype O. QUINQUEMACULATUS Kner = OPHIDIUM OCELLATUM Tiles.

Urocentrus Kner, LVIII, 51; orthotype U. PICTUS Kner. A synonym of PHOLIS Scopoli.

992. KNER (1868). *Ueber Conchipoma gadiforme . . . aus dem Rothliegendem (der Untern Dyas) von Lebach bei Saarbrücken in Rheinpreussen.* Sitzb. Akad. Wiss. Wien.

RUDOLPH KNER.

Conchopoma Kner, LVII, 279; orthotype C. GADIFORME Kner (fossil).

993. LEIDY (1868). *Remarks on Conosaurus of Gibbes.* Proc. Acad. Nat. Sci. Phila.

JOSEPH LEIDY.

Conosaurops Leidy, 202; orthotype CONOSAURUS BOWMANI Gibbes (fossil). Substitute for CONOSAURUS Gibbes; regarded as preoccupied by CONIOSAURUS, a reptile.

Diplotomodon Leidy, 202; orthotype TOMODON HORRIFICUS Leidy. A substitute for TOMODON Leidy, preoccupied.

993A. VON DER MARCK (1868). *(Holcolepis.)* Palæontographica.

W. VON DER MARCK.

Holcolepis von der Marck, 278; orthotype RHABDOLEPIS CRETACEUS von der Marck. Name a substitute for RHABDOLEPIS Marck, 1863, preoccupied.

994. MARTENS (1868). *Ueber einige ostasiatische Süsswasserthiere.* Arch. Nat. XXIV.

EDUARD VON MARTENS.

Octonema Martens, about 60; orthotype HOMALOPTERA ROTUNDICAUDA Martens. Name preoccupied, replaced by LEFUA Herzenstein.

995. PETERS (1868). *Naturwissenschaftliche Reise nach Mossambique. Zoologie.*

WILHELM PETERS.

Nothobranchius Peters, 60; orthotype CYPRINODON ORTHONOTUS Peters.
Belonichthys Peters, 108; orthotype B. ZAMBEZENSIS Peters.

996. PETERS (1868). *Ueber eine neue Gattung der Flederthiere (Peronymus) und ueber neue Gattungen und Arten der Fische.* Mon. Akad. Wiss. Berlin.
WILHELM PETERS.

Lycocyprinus Peters, 145; orthotype PŒCILIA SEXFASCIATA Peters = HAPLOCHILUS INFRAFASCIATUS Gthr.

997. PETERS (1868). *Ueber die von Herrn Dr. F. Jagor in dem ostindischen gesammelten Fische.* Mon. Akad. Wiss. Berlin.
WILHELM PETERS.

Enchelyurus Peters, 268; orthotype E. FLAVIPES Peters.

998. PETERS (1868). *Ueber eine von dem Baron Carl von der Decken entdeckte neue Gattungen von Welsen . . . aus Ostafrica.* Mon. Akad. Wiss. Berlin.
WILHELM PETERS.

Chiloglanis Peters, 599; orthotype C. DECKENI Peters.

999. POEY (1868). *Synopsis piscium cubensium,* etc. In Repertorio Fisico-Natural de la Isla de Cuba, II.
FELIPE POEY Y ALOY.

Promicrops Poey, 287; orthotype SERRANUS GUAZA Poey.
Gramma Poey, 296; orthotype G. LORETO Poey. Not GRAMMIA Rambeau, 1866, a genus of Lepidoptera.
Tropidinius (Gill) Poey, 296; orthotype MESOPRION ARNILLO Poey = APSILUS DENTATUS Guich.
Brachygenys (Scudder) Poey, 310; orthotype HÆMULON TÆNIATUM Poey.

1000. SCHIÖDTE (1868). *Om stillings udvikling hos flynder fiskene.* Nat. Tid., V.
JORGEN MATTHIAS CHRISTIAN SCHIÖDTE (1815-1884).

Bascanius Schiödte, V, 269; orthotype B. TÆDIFER Schiödte. A larval flounder, probably young of PLATOPHRYS or SYMPHURUS; name preoccupied as BASCANION.

1869.

1001. BLEEKER (1869). *Description de deux espèces inédites d'Alticus, de Madagascar.* Versl. Akad. Amsterdam.
PIETER BLEEKER.

Alticus (Commerson) Bleeker, 234; orthotype A. SALTATORIUS Commerson. Same as RUPISCARTES Sw., and of earlier date if Commerson's non-binomial names are accepted.

1002. BLEEKER (1869). *Neuvième notice sur la faune ichthyologique du Japon.* Versl. Akad. Amsterdam (2), III, 1869, 237-259.
PIETER BLEEKER.

Pseudopriacanthus Bleeker, 241; orthotype PRIACANTHUS NIPHONIUS Cuv. & Val.
Sarcocheilichthys Bleeker, 252; orthotype LEUCISCUS VARIEGATUS T. & S.

1003. BOCOURT (1869). *Descriptions de quelques reptiles et poissons nouveaux appartenant à la faune tropicale de l'Amerérique. Nouv. Arch. Mus. Hist.* Nat. Paris.
FIRMIN N. BOCOURT (1819-).

Paralonchurus Bocourt, V, 21; orthotype P. PETERSI Bocourt.

Polycirrhus Bocourt, V, 22; orthotype P. DUMERILI Bocourt. Name preoccupied in worms; replaced by POLYCLEMUS Berg, 1895.

1004. BRANDT (1869). *Einige Worte ueber die europäisch-asiatisch Störarten.* Mélanges Biologiques, VII. Bull. Acad. Sci. St. Petersburg.

JOHANN FRIEDRICH BRANDT.

Schipa Brandt, VII, 113; orthotype ACIPENSER SCHYPA Eichw. = A. NUDIVENTRIS Lovetzky. A synonym of ANTACEUS Heckel & Fitzinger.

Sterledus Brandt, VII, 113; orthotype ACIPENSER RUTHENUS L. Apparently a variant spelling of STERLETUS Heckel & Fitzinger, not a new name and not STERLETUS Raf. 1820.

1005. COPE (1869). *Description of Some Extinct Fishes Previously Unknown.* Proc. Boston Soc. Nat. Hist.

EDWARD DRINKER COPE.

Phacodus Cope, XII, 311; orthotype P. IRREGULARIS Cope (fossil). Name preoccupied; replaced by CROMMYODUS Cope, 1870.

Leptomylus Cope, XII, 313; orthotype L. DENSUS (fossil).

Plinthicus Cope, XII, 316; orthotype P. STENODON Cope (fossil). An ally of AËTOBATUS.

1006. DAY (1869). *Remarks on Some Fishes in the Calcutta Museum.* II. Proc. Zool. Soc. London.

FRANCIS DAY.

Mayoa Day, 553; orthotype M. MODESTA Day.

1007. DYBOWSKI (1869). *Vorläufige Mittheilungen über die Fischfauna des Onon-Flusses und die Ingoda in Transbaikalien.* Verh. Zool. Bot. Ges. Wien, XIX, 945-948.

BENEDIKT IVAN DYBOWSKI.

Gobiobarbus Dybowski, XIX, 951; orthotype CYPRINUS LABEO Pallas. A synonym of HEMIBARBUS Blkr.

Micraspius Dybowski, XIX, 953; orthotype M. MIANOWSKI Dybowski.

Pseudaspius Dybowski, XIX, 953; orthotype CYPRINUS LEPTOCEPHALUS Pallas.

Ladislavia Dybowski, XIX, 954; orthotype L. TACZANOWSKII Dybowski.

1008. GERVAIS (1869). *Paléontologie Générale.*

FRANÇOIS LOUIS PAUL GERVAIS (1816-1879).

Dipristis Gervais, 240; orthotype D. CHIMÆROIDES Gervais (fossil). Not DIPRISTIS Marsh of the same date, also a CHIMÆROID fragment.

1009. GÜNTHER (1869). *Account of the Fishes of the States of Central America, Based on Collections Made by Capt. J. M. Dow, F. Godman and V. Salvin.* Trans. Zool Soc. London.

ALBERT GÜNTHER.

Megalobrycon Günther, 423; orthotype M. CEPHALUS Gthr. A synonym of BRYCON M. & T.

1010. GUICHENOT (1869). *Notice sur quelques poissons inédits de Madagascar et de Chine.* Nouv. Arch. Mus. Paris., V.

ALPHONSE GUICHENOT.

Paragonus Guichenot, 202; orthotype P. STURIOIDES Guich. PARAGONUS Gill, 1861, and PARAGONUS Guich., 1869, seem both to be synonyms of PODOTHECUS Gill.

1011. MACDONALD (1869). *On . . . a New Genus of Mugilidæ Inhabiting the Fresh Waters of Viti Levu of the Feejee Group,* etc. Proc. Zool. Soc. London.

JOHN DENIS MACDONALD.

Gonostomyxus Macdonald, 38; orthotype G. LOALOA Macdonald.

1011A. MASON (1869). *(Acrodontosaurus.)* Quart. Journ. Geol., XXV.

J. W. MASON.

Acrodontosaurus Mason, XXV, 444; orthotype A. GARDNERI Mason (fossil). A synonym of PACHYRHIZODUS.

1012. OWEN (1869). *Notes on Two Ichthyodorulites Hitherto Undescribed.*

RICHARD OWEN.

Lepracanthus Owen, VI, 481; orthotype L. COLEI (Egert.) Owen (fossil).

1013. STEINDACHNER (1869). *Ichthyologische Notizen.* VIII. Sitzb. Akad. Wiss. Wien, LX.

FRANZ STEINDACHNER.

Hæmulopsis Steindachner, 60; logotype HÆMULON CORVINÆFORME Steind. A synonym of BRACHYDEUTERUS Gill.

1014. STEINDACHNER (1869). *Ichthyologische Notizen.* IX. *Ueber eine neue Gattung und Art der Cyprinoiden de China.* Sitzb. Akad. Wiss. Wien, LX.

FRANZ STEINDACHNER.

Abramocephalus Steindachner, LX, 302; orthotype A. MICROLEPIS Steind. A synonym of HYPOPHTHALMICHTHYS Blkr.

1870

1015. BLEEKER (1870). *Atlas des Indes Orientales Nederlandaises . . .* VII. *Pleuronectes,* etc.

PIETER BLEEKER.

Rhinoplagusia Bleeker, 27; orthotype PLAGUSIA JAPONICA T. & S. Replaces USINOSITA Jordan & Snyder, 1901.

1016. BLEEKER (1870). *Mededeeling omtrent eenige nieuwe vischsoorten van China.* Versl. Akad. Amsterdam (2), IV, 1870, 251-253.

PIETER BLEEKER.

Acanthorhodeus Bleeker, IV, 253; orthotype A. MACROPTERUS Blkr.
Pseudobrama Bleeker, IV, 253; logotype P. DABRYI Blkr.
Saurogobio Bleeker, IV, 253; orthotype S. DUMERILI Blkr.
Rhinogobio Bleeker, IV, 253; orthotype R. TYPUS Blkr.
Luciobrama Bleeker, IV, 253; orthotype L. TYPUS Blkr.
Leptobotia Bleeker, IV, 256; orthotype L. ELONGATA Blkr.

1017. COPE (1870). *Partial Synopsis of the Fresh-water Fishes of North Carolina.* Proc. Amer. Philos. Soc., 1870, XI, 448-495.

EDWARD DRINKER COPE.

Hypohomus Cope, XI, 449; orthotype H. AURANTIACUS Cope.

1024. DUMÉRIL (1870). *Histoire générale des poissons.* Vol. II.
AUGUSTE DUMÉRIL.

Parapegasus (Bleeker) Duméril, 493; orthotype PEGASUS NATANS L.

Typhlus (Bibron MS.) Duméril, 540; logotype ICHTHYOCAMPUS PONDICERIANUS Kaup (in synonymy). A synonym of ICHTHYOCAMPUS Kaup.

Atelurus Duméril, 584; orthotype A. GERMANI Dum.

Entelurus Duméril, 605; orthotype SYNGNATHUS ÆQUOREUS L. A synonym of NEROPHIS Raf.

Hymenolomus Duméril, 607; orthotype SYNGNATHUS HYMENOLOMUS Rich. = H. RICHARDSONI Dum. A synonym of PROTOCAMPUS Gthr., 1870.

1025. GASCO (1870). *Intorno ad un nuovo genere di pesci,* etc. Bull. Assoc. Nat. e Med. Napol., April, 1870, 59-61.
FRANCESCO GASCO.

Vexillifer Gasco, 59; orthotype V. DEPHILIPPII Gasco. An immature and very singular form of some fish, perhaps of CARAPUS ACUS.

1026. GIEBEL (1870). *Trachypoma marmoratum, ein neuer Wels aus dem Amazonenstrome.* Zeitschr. Ges. Naturw., XXXVII.
CHRISTOPH GOTTFRIED ANDREAS GIEBEL.

Trachypoma Giebel, 97; orthotype TRACHYPOMA MARMORATUM Giebel = EREMOPHILUS MUTISI. A synonym of EREMOPHILUS Humboldt, the name preoccupied.

1027. GÜNTHER (1870). *Catalogue of the Fishes in the British Museum.* VIII.
ALBERT GÜNTHER.

Rhamphosternarchus Günther, VIII, 4; logotype STERNARCHUS OXYRHYNCHUS M. & T. A synonym of STERNARCHORHYNCHUS Castelnau.

Brachyrhamphichthys Günther, VIII, 6; logotype RHAMPHICHTHYS ARTEDII Kaup. A synonym of HYPOPOMUS Gill.

Paramyrus Günther, VIII, 51; logotype ECHELUS MICROCHIR Blkr.

Myroconger Günther, VIII, 93; orthotype M. COMPRESSUS Gthr.

Helminthostoma (Cocco) Günther, VIII, 145; orthotype HELMINTHOSTOMA DELLACHIAJE Cocco. Larva of CARAPUS (FIERASFER); passing reference to an unpublished name.

Nannocampus Günther, VIII, 178; orthotype N. SUBOSSEUS Gthr.

Urocampus Günther, VIII, 179; orthotype U. NANUS Gthr.

Protocampus Günther, VIII, 193; orthotype SYNGNATHUS HYMENOLOMUS Rich. Same as HYMENOLOMUS Dum. of the same year. Günther's work is dated "May 20, 1870," Duméril's merely "1870". Neither writer quotes the other; the name of Günther has probably precedence.

Hemiconiatus Günther, VIII, 272; orthotype TETRAODON GUTTIFER Bennett. Same as EPHIPPION Bibron, 1855, which it replaces if the latter is regarded as preoccupied by EPHIPPIUM.

Liosaccus Günther, VIII, 287; logotype T. CUTANEUS Gthr.

Trichocyclus Günther, VIII, 316; orthotype T. ERINACEUS Gthr. Probably a larval DIODON; equivalent to TRICHODIODON Blkr.

Leptocarcharias (Smith MS.) Günther, VIII, 384; orthotype TRIÆNODON SMITHI M. & H. A variant of LEPTOCARIAS Smith.

Psammobatis Günther, VIII, 470; orthotype P. RUDIS Gthr.

1028. HANCOCK & ATTHEY (1870). *Notes on an Undescribed Fossil from the Newsham Coalfields near Newcastle-upon-Tyne.* Ann. Mag. Nat. Hist., V.
Albany Hancock; T. Atthey.

Archichthys Hancock & Atthey, V, 268; orthotype A. sulcidens Hancock & Atthey. Apparently a synonym of Strepsodus.

1029. KLUNZINGER (1870). *Synopsis der Fische des Rothen Meeres.* I. *Percoiden-Mugiloiden.* Verh. K.-K. Zool.-Bot. Ges. Wien, 1870.
Carl Benjamin Klunzinger (1834-).

Dirrhizodon Klunzinger, XX, 664 (Nov. 2); orthotype D. elongatus Klunzinger. A living homologue of Hemipristis Ag.

Pseudoserranus Klunzinger, XX, 687; logotype Perca louti Forskål, as restricted by Bleeker (based on Perca louti, cabrilla, and scriba). Regarded by me, following Bleeker, as a synonym of Variola Sw. Klunzinger protests against this arrangement in a later paper, Pseudoserranus (type cabrilla) being intended as a substitute for Serranus, which name of Cuvier he uses for Epinephelus.

Paracentropristes Klunzinger, XX, 687; orthotype Labrus hepatus L.

Pristiapogon Klunzinger, XX, 715; orthotype P. frenatus Klunzinger. A synonym of Apogon Lac.

Polysteganus Klunzinger, 762; orthotype P. cæruleopunctatus Klunzinger.

Gymnocranius Klunzinger, XX, 764; orthotype Dentex rivulatus Rüppell. Replaces Paradentex Blkr.

1030. DE KONINCK (1870). *Notice sur un nouveau genre de poisson fossile de la craie supérieure.* Bull. Acad. Soc. Roy. Bruxelles, XXIX.
Laurent Guillaume de Koninck (1809-1887).

Ankistrodus De Koninck, XXIX, 77; orthotype A. splendens De Koninck. A substitute for Ancistrodon Rœmer, regarded as preoccupied. Both these names, being regarded as preoccupied by Agkistrodon or Ancistrodon Beauvais, a genus of snakes, are replaced by Grypodon Hay, 1899.

1031. LANKESTER (1870). *Fishes of the Old Red Sandstone.* Paleont. Soc., I.
Edwin Ray Lankester.

Eucephalaspis Lankester, I, 43; orthotype Cephalaspis lyelli Ag. (fossil). A synonym of Cephalaspis.

Hemicyclaspis, Lankester, I, 43; orthotype Cephalaspis murchisoni Egert. (fossil).

Eukeraspis Lankester, I, 56; orthotype Sclerodus pustuliferus Ag. (fossil). A synonym of Sclerodus, that name and also Plectrodus being rejected for the inadequate reason that the structures which gave the name were wrongly supposed to be teeth.

Kallostrakon Lankester, I, 61; orthotype K. podura Lank. (fossil). Fragments of a Pteraspid.

1032. LEIDY (1870). *Remarks on Ichthyodorulites and on Certain Fossil Mammalia.* Proc. Acad. Nat. Sci. Phila., X, 12-13.
Joseph Leidy.

Xiphactinus Leidy, 12; orthotype X. audax Leidy. Perhaps the same as Portheus Cope.

1033. LEIDY (1870). *Remarks on Fossil Vertebrates.* Proc. Acad. Nat. Sci. Phila.
Joseph Leidy.

Mylocyprinus Leidy, 70; orthotype M. ROBUSTUS Leidy.

1034. MARSH (1870). *Notice of Some New Tertiary and Cretaceous Fishes.* Amer. Assoc. Adv. Sci. for 1869 (1870).
OTHNIEL CHARLES MARSH (1831-1899).

Embalorhynchus Marsh, 228; orthotype E. KINNEYI Marsh (fossil). A fossil analogue of ISTIOPHORUS.

Dipristis Marsh, 230; orthotype D. MIERSI Marsh (fossil). Apparently a synonym of EDAPHODON.

1035. NEWBERRY (1870). *Fossil Fishes from the Devonian Rocks of Ohio.* Proc. N. Y. Lyc. Nat. Hist., I, 152-153.
JOHN STRONG NEWBERRY.

Aspidophorus Newberry, I, 153; orthotype A. CLAVATUS Newberry (fossil). Name preoccupied, replaced by ASPIDICHTHYS Newberry, 1873.

1036. NEWBERRY & WORTHEN (1870). *Descriptions of Fossil Vertebrates.* Geol. Surv. Ills., IV.
JOHN STRONG NEWBERRY; A. H. WORTHEN.

Cymatodus Newberry & Worthen, IV, 108; orthotype C. OBLONGUS Newberry & Worthen (fossil). Probably a synonym of JANASSA.

Lophodus Newberry & Worthen, IV, 360; orthotype L. VARIABILIS Newberry & Worthen (fossil). Name preoccupied, replaced by AGASSIZODUS St. John & Worthen, 1875. A synonym of CAMPODUS Koninck.

Peltodus Newberry & Worthen, IV, 362; orthotype P. UNGUIFORMIS Newberry & Worthen (fossil). A synonym of JANASSA.

Listracanthus Newberry & Worthen, IV, 371; orthotype L. HYSTRIX Newberry & Worthen (fossil).

1037. POWRIE (1870). *On the Earliest Known Vestiges of Vertebrate Life. . . . Fish Remains from the Old Red Sandstone of Forfarshire.* Trans. Geol. Soc. Edinburgh, I.
JAMES POWRIE.

Cephalopterus Powrie, I, 298; orthotype C. PAGEI Powrie (fossil). Name preoccupied; a fragment of a supposed CEPHALASPID.

1038. ST. JOHN (1870). *Descriptions of Fossil Fishes from the Upper Coal Measures of Nebraska.* Proc. Amer. Philos. Soc., XI.
ORESTES H. ST. JOHN.

Peripristis St. John, XI, 434; orthotype CTENOPTYCHIUS SEMICIRCULARIS Newberry & Worthen (fossil). A synonym of CTENOPTYCHIUS.

1039. SAUVAGE (1870). *Synopsis des poissons tertiaires de Licata (Sicilia).* Ann. Sci. Nat. XIV.
HENRI ÉMILE SAUVAGE.

Pseudovomer Sauvage, XIV, 10; orthotype P. MINUTUS Sauvage (fossil).

Acanthonotos Sauvage, XIV, 10; logotype A. ARMATUS Sauvage (fossil). Name preoccupied by ACANTHONOTUS Bloch; replaced by HEMITHYRSITES Sauvage, 1873.

Tydeus Sauvage, XIV, 23; orthotype T. MEGISTOSOMA Sauvage (fossil). (Name preoccupied; replaced by ANAPTERUS Sauvage, 1873.)

1040. STEINDACHNER & KNER (1870). *Ueber einige Pleuronectiden, . . . von Decastris Bay und von Viti-Levu.* Sitzb. Akad. Wiss. Wien, LXI, 421-446.

FRANZ STEINDACHNER; RUDOLPH KNER.

Stichæopsis Steindachner & Kner, LXI, 441; orthotype S. NANA Steindachner & Kner.

1041. STEINDACHNER (1870). *Ichthyologische Notizen.* X. Sitzb. Akad. Wiss. Wien, LXI.

FRANZ STEINDACHNER.

Parapriacanthus Steindachner, LXI, 623; orthotype P. RANSONNETI Steind.; replaces PEMPHERICHTHYS Klunzinger.

1871

1042. VAN BENEDEN (1871). *Recherches sur quelques poissons fossiles de la Belgique.* (Later included in *Bull. Acad. Roy. Belg.,* XXXI.)

PIERRE J. VAN BENEDEN.

Brachyrhynchus Van Beneden, XXXI, 495; orthotype ENCHEIZIPHIUS TERETIROSTRIS Rütimeyer (fossil). Name twice preoccupied; same as ENCHEIZIPHIUS.

Xiphiorhynchus Van Beneden, XXXI, 499; orthotype X. ELEGANS Van Beneden (fossil).

Trigloides Van Beneden, XXXI, 501; orthotype T. DEJARDINI Van Beneden (fossil).

Hannovera Van Beneden, XXXI, 504; orthotype H. AURATA Beneden (fossil). An extinct ally of CETORHINUS Blainv.

Scomberodon Van Beneden, XXXI, 504; orthotype S. DUMONTI Van Beneden (fossil). A synonym or extinct analogue of SCOMBEROMORUS Lac.

1043. COPE (1871). *On Two Extinct Forms of Physostomi of the Neotropical Region.* Proc. Amer. Philos. Soc., XII.

EDWARD DRINKER COPE.

Prymnetes Cope, XII, 52; orthotype P. LONGIVENTER Cope (fossil).

Anædopogon Cope, XII, 53; orthotype A. TENUIDENS Cope (fossil). An Elopid fish not identical with CLADOCYCLUS Ag., which seems to belong to the OSTEOGLOSSIDÆ.

1044. COPE (1871). *Note on Some Cretaceous Vertebrates in the State Argicultural College of Kansas,* etc. Proc. Amer. Philos. Soc., XII.

EDWARD DRINKER COPE.

Anogmius Cope, XII, 170-354; orthotype A. CONTRACTUS Cope (fossil); not ANOGMIUS Cope, 1873 (A. ARATUS Cope, 1873). Regarded by Woodward as probably a synonym of PACHYRHIZODUS.

1045. COPE (1871). *Report on Recent Reptiles and Fishes . . . Hayden Expedition . . . Wyoming,* etc. Ann. Rept. U. S. Geol. Surv. for 1870 (1871).

EDWARD DRINKER COPE.

Apsopelix Cope, 424; orthotype A. SAURIFORMIS Cope (fossil).

1046. COPE (1871). *Contribution to the Ichthyology of the Lesser Antilles.* Trans. Amer. Philos. Soc., 1871, XIV, 445-483.

EDWARD DRINKER COPE.

Cryptotomus Cope, XIV, 462; orthotype C. ROSEUS Cope. Description of a valid genus from an injured specimen.

Eleutheractis Cope, XIV, 467; orthotype E. CORIACEUS Cope. A synonym of RYPTICUS Cuv.

Holopterura Cope, XIV, 482; orthotype H. PLUMBEA Cope.

1047. CUNNINGHAM (1871). *Notes on the Reptiles, Amphibia, Fishes, Mollusca, and Crustacea Obtained During the Voyage of H.M.S. Nassau in the Years 1866-69.* Trans. Linn. Soc. London (Zool.), 1871, XXVII, 465-502.
ROBERT OLIVER CUNNINGHAM.

Maynea Cunningham, XXVII, 471; orthotype M. PATAGONICA Cunningham.

1048. DAY (1871). *On the Fresh-water Siluroid Fishes of India and Burmah.* Proc. Zool. Soc. London, 1871, 703-721.
FRANCIS DAY.

Ailiichthys Day, 712; orthotype A. PUNCTATA Day.

1049. DELFORTRIE (1871). *Les broyeurs (Cestraciontes) du tertiaire aquitanien.* Acad. Soc. Linn. Bordeaux, XXVIII.
EUGÈNE DELFORTRIE.

Gymnodus Delfortrie, XXVIII, 232; orthotype G. HETERODON Delfortrie (fossil). An extinct analogue of DIODON.

1050. GÜNTHER (1871). *Description of New Percoid Fish from the Macquarie River.* Proc. Zool. Soc. London, 1871, 320.
ALBERT GÜNTHER.

Ctenolates Günther, 320; orthotype CTENOLATES MACQUARIENSIS Gthr. = DATNIA AMBIGUA Rich.

1051. GÜNTHER (1871). *Report on Several Collections of Fishes Recently Obtained for the British Museum.* Proc. Zool. Soc. London, 1871, 652-675.
ALBERT GÜNTHER.

Blennodesmus Günther, 667; orthotype B. SCAPULARIS Gthr.

Halidesmus Günther, 668; orthotype H. SCAPULARIS Gthr.

Nannæthiops Günther, 669; orthotype N. UNITÆNIATUS Gthr.

Pœciloconger Günther, 673; orthotype P. FASCIATUS Gthr.

1052. KLUNZINGER (1871). *Synopsis der Fische des Rothen Meeres.* II. Theil. Verh. K.-K. Zool.-Bot. Ges. Wien, 1871, XXI, 441-668.
CARL BENJAMIN KLUNZINGER.

Pempherichthys Klunzinger, XXI, 470; orthotype P. GUNTHERI Klunzinger. A synonym of PARAPRIACANTHUS Steind.

Gobiichthys Klunzinger, 479; orthotype G. PETERSI Klunzinger. A synonym of OXYURICHTHYS Blkr.

1053. LE HON (1871). *Préliminaire mémoire des poissons tertiaires de la Belgique.*
HENRI LE HON (1809-1872).

Scaldia Le Hon, 7; orthotype SCALDIA BIFORIS Le Hon (fossil). A synonym of THAUMAS or perhaps of the living genus SQUATINA.

Palanarrhichas Le Hon, 10; orthotype P. CRASSUS Le Hon (fossil).

Goniobatis Le Hon, 10; orthotype G. OMALIUSI Le Hon (fossil). Name preoccupied; a synonym of AËTOBATUS.

1054. LEIDY (1871). *Report on the Vertebrate Fossils of the Tertiary Formations of the West.* Rept. Geol. Surv. Terr. for 1870 (1871).

JOSEPH LEIDY.

Oncobatis Leidy, 70; orthotype O. PENTAGONUS Leidy (fossil). An ally of RAJA.

1055. LÜTKEN (1871). *Oneirodes eschrichtii Ltk., en ny grönlandsk Tudsefisk.* Overs. Dansk. Vid. Selsk. Kjöbenhavn, 1871, 56-74.

CHRISTIAN FREDERIK LÜTKEN.

Oneiroides Lütken, 56; orthotype O. ESCHRICHTII Lütken.

1056. POEY (1871). *Genres de poissons de la fauna de Cuba, appartenant à la famille de Percidæ.* Ann. Lyc. Nat. Hist. N. Y., X.

FELIPE POEY Y ALOY.

Menephorus Poey, X, 50; orthotype SERRANUS DUBIUS Poey.

1872

1057. BARRANDE (1872). *Indications sommaires des vestiges de poissons connus dans les dépôts Siluriens,* etc. (Bohème).

JOACHIM BARRANDE.

Gompholepis Barrande, I, 644; orthotype G. PANDERI Barrande (fossil).

1058. BLEEKER (1872). *Atlas ichthyologique,* etc. VI.* *Pleuronectes, Clupées,* etc.

PIETER BLEEKER.

Leptogaster Bleeker, 168; orthotype SPRATELLOIDES ARGYROTÆNIA Blkr. A synonym of SPRATELLOIDES (an error probably overlooked in proof-reading).

Paralosa Bleeker, —. This name is quoted from Bleeker, but I fail to find it anywhere. Said to be a synonym of HARENGULA Cuv. & Val.

1059-1060. CASTELNAU (1872). *Contributions to the Ichthyology of Australia.* Proc. Zool. Acclim. Soc. Victoria, 1872, I, 29-247.

*FRANCIS L. CASTELNAU.

Microperca Castelnau, I, 48; orthotype M. YARRÆ Castelnau. Name preoccupied by MICROPERCA Putnam, 1863. A synonym of NANNOPERCA Gthr.

Murrayia Castelnau, I, 61; orthotype M. GUENTHERI Castelnau. A synonym of MACQUARIA Cuv. & Val.

Riverina Castelnau, I, 64; orthotype R. FLUVIATILIS Castelnau. Probably a synonym of MACQUARIA Cuv. & Val.

Neotephræops Castelnau, I, 68; orthotype CRENIDENS ZEBRA Rich. Same as GIRELLICHTHYS Klunzinger. Both are synonyms of MELAMBAPHES Gthr.

Neoplatycephalus Castelnau, I, 87; orthotype N. GRANDIS Castelnau.

Neosphyræna Castelnau, I, 96; orthotype N. MULTIRADIATA Castelnau = DINOLESTES MUELLERI Klunzinger. A synonym of DINOLESTES Klunzinger.

Richardsonia Castelnau I, 112; orthotype R. INSIGNIS Castelnau = HISTIOPTERUS LABIOSUS Rich. Name preoccupied; replaced by PARISTIOPTERUS Blkr., 1876, and later by MACCULLOCHIA Waite.

---

* François Laporte Comte de Castelnau, while in South Africa and Australia, wrote his name in English fashion as Francis L. Castelnau.

Atherinosoma Castelnau, I, 136; orthotype A. VORAX Castelnau.

Yarra Castelnau, I, 231; orthotype Y. SINGULARIS Castelnau. A synonym of GEOTRIA Gray.

Neomordacia Castelnau, I, 232; orthotype N. HOWITTII Castelnau. A synonym of GEOTRIA Gray.

Neocarassius Castelnau, I, 236; orthotype N. VENTRICOSUS Castelnau.

Aploactisoma Castelnau, I, 244; orthotype A. SCHOMBURGKI Castelnau. A synonym of APLOACTIS T. & S.

Vincentia Castelnau, I, 245; logotype V. WATERHOUSEI Castelnau. A synonym of APOGON Lac.

Heteroscarus Castelnau, I, 245; logotype H. FILAMENTOSUS Castelnau.

Ophioclinus Castelnau, I, 246; orthotype O. ANTARCTICUS Castelnau.

Heteroclinus Castelnau, I, 247; orthotype H. ADELAIDÆ Castelnau.

1061. COPE (1872). *On the Fishes of the Ambyiacu River.* Proc. Acad. Nat. Sci. Phila. for 1871, 250-292 (dated Jan. 16, 1872).

EDWARD DRINKER COPE.

Læmolyta Cope, 258; logotype ANOSTOMUS TÆNIATA Kner.

Iguanodectes Cope, 260; orthotype I. TENUIS Cope.

Triportheus Cope, 263; logotype T. ALBUS Cope.

Zathorax Cope, 271; orthotype Z. MONITOR Cope.

Physopyxis Cope, 273; orthotype P. LYRA Cope.

Dianema Cope, 276; orthotype D. LONGIBARBIS Cope.

Brochis Cope, 277; orthotype B. CÆRULEUS Cope.

Otocinclus Cope, 283; orthotype O. VESTITUS Cope.

Pariolius Cope, 289; orthotype P. ARMILLATUS Cope.

1062. COPE (1872). *Report on the Reptiles and Fishes Obtained by the Naturalists of the Expedition.* Hayden's Geol. Surv. Wyoming, etc.

EDWARD DRINKER COPE.

Coliscus Cope, 437; orthotype COLISCUS PARIETALIS Cope = young of PIMEPHALES PROMELAS Raf. A synonym of PIMEPHALES Raf.

Sarcidium Cope, 440; orthotype S. SCOPIFERUM Cope. A synonym of PHENACOBIUS Cope, 1867.

1063. COPE (1872). *Report on the Recent Reptiles and Fishes of the Survey, Collected by Campbell Carrington and C. M. Dawes.* Hayden's Rept. Geol. Surv. Montana, etc., for 1871 (1872).

EDWARD DRINKER COPE.

Apocope Cope, 472; logotype A. CARRINGTONI Cope.

Protoporus Cope, 473; orthotype P. DOMNINUS Cope (young of TIGOMA LINEATA Grd.). A synonym of TIGOMA Grd.

Myloleucus Cope, 475; orthotype M. PULVERULENTUS Cope. MYLOLEUCUS is a synonym of TIGOMA Grd. In studying these species, Professor Cope by accident replaced teeth of a SIPHATELES in his type example of MYLOLEUCUS PULVERULENTUS (*fide* Snyder and Fowler). The group called RUTILUS by Jordan & Evermann (*Fishes of N. and M. Amer.*, 1896, 243) is a composite one. RUTILUS, with the teeth 6-5, should stand by itself. The name LEUCOS Heckel, preoccupied by LEUCUS Kaup, with teeth 5-5, should probably give place to

Cenisophius Bon., while the American species should be distributed between Siphateles Cope, Hesperoleucus Snyder, and Leucidius Snyder.

1064. COPE (1872). *A New Genus of Saurodont Fishes, Erisichthe, from the Kansas Niobrara.* Proc. Acad. Nat. Sci. Phila.

Edward Drinker Cope.

Erisichthe Cope, 280; orthotype E. nitida Cope (fossil). A synonym of Protosphyræna Leidy.

1065. COPE (1872). *On the Families of Fishes of the Cretaceous Formation of Kansas.* Proc. Amer. Philos. Soc., 1872, XII, 327-357.

Edward Drinker Cope.

Portheus Cope, XII, 331; orthotype P. molossus Cope (fossil). Possibly a synonym of Xiphactinus Leidy, 1870.

Daptinus Cope, XII, 339; orthotype Saurocephalus phlebotomus Cope (fossil). A synonym of Saurodon Hays, itself a synonym of Saurocephalus Harlan.

Empo Cope, XII, 347; orthotype E. nepaholica Cope (fossil).

Stratodus Cope, XII, 349; orthotype S. apicalis Cope (fossil).

1066. COPE (1872). *On the Tertiary Coal and Fossils of Osino, Nevada.* Proc. Amer. Philos. Soc., 1872, XII, 478-481.

Edward Drinker Cope.

Trichophanes Cope, XII, 479; orthotype T. hians Cope (fossil).

Amyzon Cope, XII, 480; orthotype A. mentale Cope (fossil).

1067. COPE (1872). *Notices of New Vertebrata from the Upper Waters of Bitter Creek, Wyoming Territory.* Proc. Amer. Philos. Soc., for 1871, XII, 483-486 (reprints dated Aug. 20, 1872).

Edward Drinker Cope.

Rhineastes Cope, XII, 486; orthotype R. peltatus Cope (fossil).

1068. DYBOWSKI (1872). *Zur Kenntniss der Fischfauna des Amurgebietes.* Verh. Bot. Ges. Wien, 1872, 200-222.

Benedikt Ivan Dybowski

Actenolepis Dybowski, 210; logotype A. ditmarii Dybowski = Perca chuatsi Basilewsky. A synonym of Siniperca Gill.

Onychodon Dybowski, 211; orthotype Cephalus mantschuricus Basilewsky. Same as Abramocephalus Steind., both synonyms of Hypophthalmichthys Blkr.

Gobiosoma Dybowski, 211; orthotype G. amurensis Dybowski. Name preoccupied by Gobiosoma Grd. A synonym of Saurogobio Blkr.

Megalobrama Dybowski, 213; orthotype M. akolkovii. A synonym of Parabramis Blkr.

Squalidus Dybowski, 215; orthotype S. chankaënsis Dybowski. A synonym of Gnathopogon Blkr. (Leucogobio Gthr.).

Plagiognathus Dybowski, 216; orthotype P. jelskii Dybowski. Name preoccupied; replaced by Plagiognathops Berg.

Barbodon Dybowski, 216; orthotype B. lacustris Dybowski. A synonym of Sarcocheilichthys Blkr.

1069. EGERTON (1872). *Fish: Heterolepidotus, Isocolum,* etc. Mem. Geol. Surv. United Kingdom, 1872, XIII, decade 7.

PHILIP DE MALPAS GREY EGERTON.

Heterolepidotus Egerton, XIII, No. 2; orthotype H. LATUS Egert. (fossil).

Platysiagum Egerton, XIII, No. 6; orthotype P. SCLEROCEPHALUM Egert. (fossil).

Palæospinax Egerton, XIII, No. 7; orthotype THYELLINA PRISCA (fossil).

Drepanephorus Egerton, XIII, No. 9; orthotype ACRODUS RUGOSUS Ag. (fossil). An extinct analogue of the living HETERODONTUS or CENTRACION.

1070. EGERTON (1872). *On Prognathodus guentheri Egerton, a New Genus of Fossil Fishes from the Lias of Lyme Regis.* Quart. Journ. Geol. Soc., 1872, XXVIII, 233-237.

PHILIP DE MALPAS GREY EGERTON.

Prognathodus Egerton, XXVIII, 233; orthotype P. GUENTHERI Egert. (fossil). Not PROGNATHODES Gill, the root meaning being different.

1071. GÜNTHER (1872). *Description of Thrissopater salmoneus n. sp.* (In *Great Britain and Ireland Geological Survey. Figures and Descriptions Illustrative of British Organic Remains.* Decade 13, London, 1872.)

ALBERT GÜNTHER.

Thrissopater Günther, No. 1; orthotype T. SALMONEUS Gthr. (fossil).

1072. GÜNTHER (1872). *Zoological Record for 1871.*

ALBERT GÜNTHER.

Macruronus Günther, 103; orthotype CORYPHÆNOIDES NOVÆ-ZELANDIÆ Hector.

1073. GÜNTHER (1872). *On a New Genus of Characinoid Fishes from Demerara.* Proc. Zool. Soc. London, 1872, 146.

ALBERT GÜNTHER.

Nannostomus Günther, 146; orthotype N. BECKFORDI Gthr.

1074. GÜNTHER (1872). *Description of Two New Fishes (Lanioperca mordax, Chilodactylus allporti) from Tasmania.* Ann. Mag. Nat. Hist., 1872, ser. 4, X, 183-184.

ALBERT GÜNTHER.

Lanioperca Günther, 183; orthotype L. MORDAX, Gthr. = DINOLESTES MUELLERI Klunzinger.

"The same fish is described as DINOLESTES MUELLERI (g. et. sp. n.) by Klunzinger, *Arch. f. Nat.,* 1872, p. 29, Taf. 3. (this name has the priority); and still later as NEOSPHYRÆNA MULTIRADIATA (g. et. sp. n.) by Castelnau, *Proc. Zool. Soc. Victor,* 1872, p. 96."—(Günther).

The name DINOLESTES stands.

1075. GÜNTHER (1872). *Notice on Two New Fishes (Symphorus tæniolatus, Mugil meyeri) from Celebes.* Ann. Mag. Nat. Hist., 1872, IV, ser. 9, 438-440.

ALBERT GÜNTHER.

Symphorus Günther, 438; orthotype S. TÆNIOLATUS Gthr.

1076. HANCOCK & ATTHEY (1872). *Descriptive Notes on a Nearly Entire Specimen of Pleurodus . . . in the Coal Measures of Newsham.* Trans. Nat. Hist. Soc. Northumberland, IX.

ALBANY HANCOCK; T. ATTHEY.

Pleurodus (Agassiz) Hancock & Atthey, IX, 408; orthotype PLEURODUS RANKINEI Ag. (fossil). Name regarded as preoccupied by PLEURODON Wood, 1840; replaced by PLEUROPLAX Woodw. (1889).

1077. HUTTON (1872). *Contributions to the Ichthyology of New Zealand.* Trans. Proc. New Zealand Instit., 1872, V, 259-272.
FREDERICK WOLLASTON HUTTON (1836-1905).

Calloptilum Hutton, 266; orthotype C. PUNCTATUM Hutton. Name preocupied, replaced by AUCHENOCEROS Gthr.

1078. HUTTON & HECTOR (1872). *Fishes of New Zealand,* etc. Wellington, 1872, 1-133.
FREDERICK WOLLASTON HUTTON; JAMES HECTOR.

Phosichthys Hutton & Hector, 55; orthotype P. ARGENTEUS Hutton & Hector (later corrected to PHOTICHTHYS).

1079. KLUNZINGER (1872). *Zur Fischfauna von Süd-Australien.* Arch. Naturg., 1872, 38 Jahrg., pt. 1, 17-47.
CARL BENJAMIN KLUNZINGER.

Paradules Klunzinger, 20; logotype P. OBSCURUS Klunzinger. Name preoccupied; a synonym of NANNOPERCA Gthr.

Girellichthys Klunzinger, 22; orthotype CRENIDENS ZEBRA Rich. Same as NEOTEPHRÆOPS Castelnau, and a little earlier; both apparently synonyms of MELAMBAPHES Gthr.

Dinolestes Klunzinger, 29; orthotype D. MUELLERI Klunzinger; replaces LANIOPERCA and NEOSPHYRÆNA, both a little later in the same year.

1080. PETERS (1872). *Ueber eine neue Gattung von Fischen aus der Familie der Cataphracti Cuv., Scombrocottus salmoneus, von der Vancouvers-Insel.* Monatsb. Akad. Wiss. Berlin, 1872, 568-570.
WILHELM CARL HARTWIG PETERS.

Scombrocottus Peters, 568; orthotype S. SALMONEUS Peters = GADUS FIMBRIA Pallas. A synonym of ANOPLOPOMA Ayres.

1081. THIOLLIÈRE (1872). *Description des poissons fossiles des gisements coralliens du Jura dans le Bugey.* (Second edition, the first in 1854.)
VICTOR JOSEPH DE L'ISLE THIOLLIÈRE.

Attakeopsis Thiollière, 23; orthotype A. DESORI Thiollière (fossil). A synonym of IONOSCOPUS Costa; first printed as name only in 1858.

1873

1082. BARKAS (1873). *Illustrated Guide to the Fish* . . . (and other) *Remains of the Northumberland Carboniferous Strata.*
THOMAS PALLISTER BARKAS (1819-1891).

Orthognathus Barkas, 38; orthotype O. RETICULOSUS Barkas (fossil). A synonym of RHIZODOPSIS Young.

Labyrinthodontosaurus Barkas, 75; orthotype L. SIMMI Barkas = HOLOPTYCHIUS SAUROIDES Binney. A synonym of STREPSODUS Huxley.

1083. VAN BENEDEN (1873). *Sur un nouveau poisson du terrain Bruxellien.* Bull. Acad. Roy. Belgique, XXXV.

PIERRE J. VAN BENEDEN.

Homalorhynchus Van Beneden, XXXV, 210; orthotype PALÆORHYNCHUM BRUXELLIENSE Le Hon (fossil). A synonym of HEMIRHYNCHUS Ag.

1084. BLEEKER (1873). *Mémoire sur la faune ichthyologique de Chine.* Neder. Tijdschr. Dierk., IV, 1873, 113-154.

PIETER BLEEKER.

Silurodon Bleeker, IV, 125; orthotype S. HEXANEMA Blkr.

Leptopegasus Bleeker, IV, 125; orthotype PEGASUS NATANS L. A synonym of PARAPEGASUS Dum. (1870).

Paragobiodon Bleeker, IV, 129; orthotype GOBIUS ECHINOCEPHALUS Rüppell (not P. MELANOSOMA Blkr., as stated by Jordan & Seale, *Fishes of Samoa*). Replaces RUPPELLIA Sw., 1839, preoccupied.

Tylometopon (Van Beneden) Bleeker, IV, 133; orthotype T. DUSSUMIERI Blkr.

Odontolabrax Bleeker, IV, 149; orthotype O. TYPUS Blkr.

1084A. BLEEKER (1873). *Révision des espèces indo-archipélagiques du groupe des Anthianini.* Neder. Tijdschr. Dierk., IV, 1872, 155-169.

PIETER BLEEKER.

Pseudanthias Bleeker, 158; orthotype ANTHIAS PLEUROTÆNIA Blkr.

Dactylanthias Bleeker, 158; orthotype D. APLODACTYLUS Blkr.

Odontanthias Bleeker, 158; orthotype ANTHIAS RHODOPELUS Gthr.

Plectranthias Bleeker, 158; orthotype PLECTROPOMA ANTHIOIDES Gthr.

1085. BLEEKER (1873). *Mededeelingen omtrent eene herziening der Indisch-Archipelagische soorten van Epinephelus, Lutjanus, Dentex en verwante geslachten.* Versl. Akad. Amsterdam (2) VII, 1873, 40-46.

PIETER BLEEKER.

Gnathodentex Bleeker, VII, 41; orthotype PENTAPUS AURILINEATUS Blkr.

1086. BLEEKER (1873). *Sur le genre Parapristipoma et sur l'identité spécifique des Perca trilineata Thunb., Pristipoma japonicum Cv. et Diagramma japonicum* Blkr. Arch. Neerl. Sci. Nat., VIII, 1873, 19-24.

PIETER BLEEKER.

Parapristipoma Bleeker, VIII, 22; orthotype PERCA TRILINEATA Thunberg.

1087. CASTELNAU (1873). *Contributions to the Ichthyology of Australia.* Proc. Zool. Soc. Victoria, II, 37-158.

FRANCIS LAPORTE CASTELNAU.

Lacepedia Castelnau, II, 42; orthotype L. CATAPHRACTA Castelnau.

Ruppelia Castelnau, II, 51; orthotype R. PROLONGATA Castelnau. A synonym of PARAPLESIOPS Blkr. Name preoccupied by RUPPELLIA Sw., a genus of gobies, and by a still earlier genus of insects.

Zantecla Castelnau, II, 87; orthotype Z. PUSILLA Castelnau. A synonym of MELANOTÆNIA Gill.

Ellerya Castelnau, II, 95; orthotype E. UNICOLOR Castelnau. A synonym of GOBIODON Kuhl & Van Hasselt.

Neomyripristis Castelnau, II, 98; orthotype N. AMŒNUS Castelnau.

Neocirrhites Castelnau, II, 101; orthotype N. ARMATUS Castelnau. A synonym of CIRRHITICHTHYS.

Neosudis Castelnau, II, 118; orthotype N. VORAX Castelnau.

Neotrygon Castelnau, II, 121; orthotype RAJA TRYGONOIDES Castelnau.

Edelia Castelnau, II, 123; logotype E. VITTATA Castelnau. A synonym of NANNOPERCA Gthr.

Bostockia Castelnau, II, 126; orthotype B. POROSA Castelnau.

Neochætodon Castelnau, II, 130; orthotype N. VITTATUS Castelnau. A synonym of MICROCANTHUS Sw.

Hectoria Castelnau, II, 151; orthotype OLIGORUS GIGAS Owen. A synonym of POLYPRION Val.

1088. CASTELNAU (1873). *Edible Fishes of Victoria.* Exhibition Essays.

FRANCIS LAPORTE CASTELNAU.

Bleeckeria Castelnau, —; orthotype B. CATAFRACTA Castelnau = PLESIOPS BLEEKERI Gthr. (*fide* Ogilby). Name preoccupied as BLEEKERIA Gthr. A synonym of PARAPLESIOPS Blkr., 1875.

1089. COPE (1873). *On the Extinct Vertebrata of the Eocene of Wyoming,* etc. Rept. Geol. Surv. for 1872.

EDWARD DRINKER COPE.

Clastes Cope, 633; orthotype C. ANAX Cope (fossil) = LEPIDOSTEUS ATROX Leidy. An extinct homologue of LEPIDOSTEUS.

Pappichthys Cope, 636; orthotype P. PLICATUS Cope (fossil).

Astephus Cope, 637; orthotype RHINEASTES CALVUS Cope.

1090. COPE (1873). *A Contribution to the Ichthyology of Alaska.* Proc. Amer. Philos. Soc., 1873, XIII, 24-32.

EDWARD DRINKER COPE.

Bathymaster Cope, XIII, 31; orthotype B. SIGNATUS Cope.

1091. COPE (1873). *On Some New Batrachia and Fishes from the Coal Measures of Linton, Ohio.* Proc. Acad. Nat. Sci. Phila.

EDWARD DRINKER COPE.

Conchiopsis Cope, 341; orthotype C. FILIFERUS Cope (fossil). A synonym of CŒLACANTHUS Ag.

Peplorhina Cope, 343; orthotype P. ANTHRACINA Cope (fossil). Regarded as an amphibian by Dr. Newberry.

1092. COSTA (1873). *Ittioliti fossili Italiani.*

ORONZIO GABRIELE COSTA.

Omalopleurus Costa, 59; orthotype O. SPECIOSUS Costa (fossil). A synonym of DAPEDIUM Leach.

1093. FITZINGER (1873). *Die Gattungen der europäischen Cyprinen nach ihren aüsseren Merkmalen.* Sitzb. Akad. Wiss. Wien, LXVIII

LEOPOLD JOSEPH FRANZ JOHANN FITZINGER.

Zopa Fitzinger, LXVIII, 152; orthotype CYPRINUS SOPA Pallas. Apparently a synonym of BALLERUS Heckel.

Vimba Fitzinger, LXVIII, 152; tautotype CYPRINUS VIMBA L. An ally of ABRAMIS Cuv.

Rubellus Fitzinger, LXVIII, 152, 162; orthotype CYPRINUS RUTILUS L. A synonym of RUTILUS Raf.

Orfus Fitzinger, LXVIII, 152, 163; orthotype LEUCISCUS VIRGO Heckel (Orfus Germanorum Marsilius, 1726, *Pisces Danubienses*) = CYPRINUS PIGUS Lac. A synonym of CENISOPHIUS Bon.

Cephalopsis Fitzinger, LXVIII, 152, 165; logotype LEUCISCUS SVALLIZE Heckel & Kner. A synonym of LEUCISCUS Cuv.

Habrolepis Fitzinger, LXVIII, 152, 167; orthotype LEUCISCUS UKLIVA Heckel. A synonym of TELESTES Bon.

Bathystoma Fitzinger, LXVIII, 152, 168; orthotype LEUCISCUS MICROLEPIS. Name preoccupied; a synonym of TELESTES Bon.

Machærochilus Fitzinger, LXVIII, 152, 170; orthotype CHONDROSTOMA PHOXINUS Heckel. A synonym of CHONDROSTOMA Ag.

1094-1095. GOLDENBURG (1873). *Fauna Saræpontana fossilis.*
F. GOLDENBURG (1873-).

Leiolepis Goldenburg, 5; orthotype (not named by Woodward). A synonym of AMBLYPTERUS Ag.

1096. GÜNTHER (1873). *New Fishes from Angola.* Ann. Mag. Nat. Hist., 1873, ser. 4, XII, 142-144.
ALBERT GÜNTHER.

Channalabes Günther, 142; orthotype C. APUS Gthr.

Bryconæthiops Günther, 143; orthotype B. MICROSTOMA Gthr.

1097. GÜNTHER (1873). *Report on a Collection of Fishes from China.* Ann. Mag. Nat. Hist., ser. 4, XII, 239-250.
ALBERT GÜNTHER.

Lophiogobius Günther, 241; orthotype L. OCELLICAUDA Gthr. Not identical with LOPHOGOBIUS Gill.

Myloleucus Günther, 247; orthotype LEUCISCUS ÆTHIOPS Basilewsky. Name preoccupied by MYLOLEUCUS Cope.

Toxabramis Günther, 249; orthotype T. SWINHONIS Gthr.

Psephurus Günther, 250; orthotype POLYODON GLADIUS Martens.

1098. GÜNTHER (1873). *Andrew Garrett's Fische der Südsee.* Band I. Journ. Mus. Godeffroy, 1873, 1-128.
ALBERT GÜNTHER.

Gymnoscopelus Günther, 91; orthotype G. APHYA Gthr.

Holotrachys Günther, 93; orthotype MYRIPRISTIS LIMA Cuv. & Val.

Diplophos Günther, 101; orthotype D. TÆNIA Gthr.

1099. HAAST (1873). *Notes on Some Undescribed Fishes of New Zealand.* Trans. New Zealand Instit., 1873, V, 272-278.
JOHANN FRANZ JULIUS VON HAAST (1822-1887).

Synnema Haast, V, 274; orthotype ANEMA MONOPTERYGIUM Blkr.

Bowenia Haast, V, 276; orthotype B. NOVÆ-ZELANDIÆ Haast.

1100. KAUP (1873). *Ueber die Familie Triglidæ, nebst einigen Worten über die Classification.* Archiv. Naturgeschichte.
JOHANN JACOB KAUP.

Microtrigla Kaup, 86; logotype TRIGLA PAPILIO Cuv. & Val. Differs from LEPIDOTRIGLA in the armed scales of the lateral line.

Chelidonichthys Kaup, 87; logotype TRIGLA HIRUNDO L.

Lyrichthys Kaup, 88; logotype TRIGLA LYRA L. A valid subgenus, if TRIGLA GURNARDUS L. is taken as type of TRIGLA, setting aside the later choice of type (TRIGLA LYRA L.) by Jordan & Gilbert, 1883.

Palænichthys Kaup, 90; logotype TRIGLA ASPERA Cuv. & Val. A synonym of LEPIDOTRIGLA Gthr.

These subgenera of Kaup have been overlooked by authors. They may be thus briefly defined, after Kaup:

a. Scales moderate, evenly placed; preorbital not produced.
b. Lateral line armed with strong spines; dorsal short. MICROTRIGLA.
bb. Lateral line unarmed; head well armed. (LEPIDOTRIGLA) PALÆNICHTHYS.
aa. Scales very small, crowded.
c. Lateral line unarmed; preorbital produced. CHELIDONICHTHYS.
cc. Lateral line with strong spines.
d. Preorbital expanded in a broad, emarginate "lyre-like projection." LYRICHTHYS.
dd. Preorbital not expanded. TRIGLA.

1101. LANKESTER (1873). *On Holaspis sericeus and on the Relationships of the Fish-Genera Pteraspis, Cyathaspis, and Scaphaspis.* Geol. Mag., X.
EDWIN RAY LANKESTER.

Holaspis Lankester, X, 242; orthotype H. SERICEUS Lank. (fossil). Name preoccupied; a synonym of PALÆASPIS Claypole.

1102. LEIDY (1873). *Contributions to the Extinct Vertebrate Fauna of the Western Territories.* I. Rept. U. S. Geol. Surv. for 1867 (1873).
JOSEPH LEIDY.

Protautoga Leidy, 15; orthotype P. CONIDENS Leidy.

Eumylodus Leidy, 309; orthotype LAQUEATUS Leidy (fossil). A synonym of EDAPHODON Buckland.

1103. LEIDY (1873). *Notice of Remains of Fishes in the Bridger Tertiary Formations of Wyoming.* Proc. Acad. Nat. Sci. Phila.
JOSEPH LEIDY.

Hypamia Leidy, 98; orthotype H. ELEGANS Leidy (fossil).

Protamia Leidy, 98; orthotype AMIA GRACILIS Leidy (fossil).

Phareodus Leidy, 99; P. ACUTUS Leidy (fossil). Genus undefined, but not the species; replaces DAPEDOGLOSSUS Cope.

1104. LÜTKEN (1873). *Nogle nye eller mindre fuldstændigt kjendte Pandsermaller, isaer fra det nordlige Sydamerica.* Vid. Meddel., Kjöbenhavn, 1873, 202-220.
CHRISTIAN FREDERIK LÜTKEN.

Xenomystus Lütken, 217; orthotype X. GOBIO Lütken. Name preoccupied; replaced by HEMIPSILICHTHYS Eigenmann.

1105. MARCK (1873). *(Fossile Fische.)* Palæontographia, XXII, 1873.
W. VON DER MARCK.

Thrissopteroides von der Marck, XXII, 61; orthotype T. ELONGATUS von der Marck (fossil).

1106. NEWBERRY (1873). *Descriptions of Fossil Fishes.* Rept. Geol. Surv. Ohio. I. (*Devonian System*, 290-324.)

JOHN STRONG NEWBERRY.

Cyrtacanthus Newberry, I, 306; orthotype C. DENTATUS Newberry (fossil). Probably a synonym of ERISMACANTHUS.

Liognathus Newberry, I, 306; orthotype L. SPATULATUS Newberry. Name preoccupied by LEIOGNATHUS Lac.; replaced by LISPOGNATHUS Miller, 1892.

Rhynchodus Newberry, I, 307; orthotype R. SECANS Newberry (fossil).

Dinichthys Newberry, I, 313; logotype D. HERTZERI Newberry (fossil).

Aspidichthys Newberry, I, 322; orthotype ASPIDOPHORUS CLAVATUS Newberry (fossil). Replaces ASPIDOPHORUS Newberry, preoccupied.

1107. POEY (1873). *Grammicolepis brachiusculus, tipo de una nueva familia en la clase de los peces.* Anal. Soc. Española Hist. Nat., Madrid, 1873, II, 403-406.

FELIPE POEY Y ALOY.

Grammicolepis Poey, II, 403; orthotype G. BRACHIUSCULUS Poey.

1108. SAUVAGE (1873). *Note sur le Sebastes minutus.* Ann. Sci. Nat. (Zool.), V.

HENRI ÉMILE SAUVAGE.

Sebastopsis Sauvage, V, 1; orthotype SEBASTES MINUTUS Cuv. Identical with the earlier SEBASTOPSIS Gill, both being synonyms of SCORPÆNODES Blkr.

1109. SAUVAGE (1873). *Mémoire sur la faune ichthyologique de la période tertiaire et plus spécialement sur les poissons fossiles d'Oran (Algérie) et sur ceux découverts par M. R. Alby à Licata en Sicile.* Ann. Sci. Géol., 1873, IV, No. 1.

HENRI ÉMILE SAUVAGE.

Trichiurichthys Sauvage, IV, 130; orthotype T. INCERTUS Sauvage (fossil).

Hemithyrsites Sauvage, IV, 136; orthotype ACANTHONOTUS ARMATUS Sauvage (fossil); replaces ACANTHONOTOS Sauvage, preoccupied by ACANTHONOTUS Bloch.

Pseudeleginus Sauvage, IV, 164; orthotype P. ALBYI Sauvage (fossil).

Parascopelus Sauvage, IV, 196; orthotype SCOPELUS LACERTOSUS Sauvage (fossil).

Anapterus Sauvage, IV, 199; orthotype TYDEUS MEGISTOSOMA Sauvage (fossil). Name a substitute for TYDEUS Sauvage, preoccupied.

1110. TRAQUAIR (1873). *On a New Genus (Ganorhynchus) of Fossil Fish of the Order Dipnoi.* Geol. Mag., 1873, X, 552-555.

RAMSAY HEATLEY TRAQUAIR (1840-1912).

Ganorhynchus Traquair, 555; orthotype G. WOODWARDI Traquair (fossil).

1111. VAILLANT (1873). *Recherches sur les poissons des eaux douces de l'Amérique septentrionale designés par M. L. Agassiz sous le nom d'Etheostomatidæ.* Nouv. Archiv. Mus. Hist. Nat. Paris, 1873, IX, 5-154.

LÉON LOUIS VAILLANT.

Plesioperca Vaillant, IX, 36; orthotype P. ANCEPS Vaillant = HADROPTERUS NIGROFASCIATUS Ag. A synonym of HADROPTERUS Ag.

Astatichthys Vaillant, IX, 106; orthotype ETHEOSTOMA CÆRULEA Storer. A synonym of OLIGOCEPHALUS Grd.

1874

1112. BARKAS (1874). *On the Microscopical Structure of Fossil Teeth from the Northumberland Coal Measures.* Monthly Review Dental Surgery.
William James Barkas.

Petalodopsis Barkas, II, 538; orthotype P. mirabilis Barkas = Sagenodus inæqualis Owen (fossil). Probably a synonym of Sagenodus.

1113. BLEEKER (1874). *Typi nonnulli generici piscium neglecti.* Versl. Akad. Amsterdam (2), VIII, 367-371.
Pieter Bleeker.

Campylomormyrus Bleeker, VIII, 367; orthotype Mormyrus tamandua Gthr.

Oxymormyrus Bleeker, VIII, 367; orthotype Mormyrus zanclirostris Gthr.

Solenomormyrus Bleeker, VIII, 368; orthotype Centriscus niloticus Bl. & Schn.

Pararhychobdella Bleeker, VIII, 368; orthotype Rhynchobdella maculata Reinwardt.

Polyacanthonotus Bleeker, VIII, 368; orthotype Notacanthus rissoanus Filippi & Verany.

Gunnellops Bleeker, VIII, 368; orthotype Gunnellus roseus Cuv. & Val.

Lycodalepis Bleeker, VIII, 369; orthotype Lycodes mucosus Rich.

Paralycodes Bleeker, VIII, 369; orthotype Lycodes variegatus Gthr.

Acanthocepola Bleeker,, VIII, 369; orthotype Cepola krusensterni Schlegel.

Macuroplus Bleeker, VIII, 369; orthotype Macrurus serratus Lowe.

Paramacrurus Bleeker, VIII, 370; orthotype Lepidoleprus australis Rich.

Oxymacrurus Bleeker, VIII, 370; orthotype Macrurus japonicus T. & S.

Parabembras Bleeker, VIII, 370; orthotype Bembras curtus T. & S.

Octogrammus Bleeker, VIII, 370; orthotype "Labrax octogrammus Schlegel" = Octogrammus pallasi Blkr. A synonym of Hexagrammos Steller.

Parachætodon Bleeker, VIII, 371; orthotype Chætodon oligacanthus Blkr.

1114. BLEEKER (1874). *Notice sur les genres Amblyeleotris, Valenciennesia et Brachyeleotris.* Versl. Akad. Amsterdam (2), VIII, 1874, 372-376.
Pieter Bleeker.

Amblyeleotris Bleeker, VIII, 372; orthotype Eleotris periophthalmus Blkr.

Eleotrioides Bleeker, VIII, 372; orthotype E. cyanostigma Blkr. Not Eleotriodes Blkr., 1857; a synonym of Brachyeleotris Blkr.

1115. BLEEKER (1874). *Esquisse d'un système naturel des Gobioides.* Arch. Néerl. Sci. Nat., IX, 1874, 289-331.
Pieter Bleeker.

Guavina Bleeker, IX, 302; orthotype Eleotris guavina Cuv. & Val.

Oxyeleotris Bleeker, IX, 302; orthotype Eleotris marmorata Blkr.

Culius Bleeker, IX, 303; orthotype Culius fuscus Blkr = Eleotris nigra Q. & G. A synonym of Eleotris Gronow.

Belobranchus Bleeker, IX, 304; orthotype B. quoyi Blkr.

Gymneleotris Bleeker, IX, 304; orthotype Eleotris seminudus Gthr.

Butis Bleeker, IX, 304; orthotype Cheilodipterus butis Ham.

Gymnobutis Bleeker, IX, 304; orthotype Eleotris gymnocephalus Steind.

Prionobutis Bleeker, IX, 305; orthotype Eleotris dasyrhynchus Gthr. A synonym of Butis Blkr.

Odontobutis Bleeker, IX, 305; orthotype Eleotris obscura T. & S.

Priolepis (Ehrenberg) Bleeker, IX, 305; orthotype ASTERROPTERYX SEMIPUNCTATUS Rüppell. A synonym of ASTERROPTERYX Rüppell, noted in passing.

Brachyeleotris Bleeker, IX, 306; orthotype ELEOTRIS CYANOSTIGMA Blkr.

Heterelectris Bleeker, IX, 306; orthotype GOBIUS DIADEMATUS Rüppell.

Valenciennesia Bleeker, IX, 307; orthotype ELEOTRIS STRIGATA Blkr.

The names VALENCIENNEA, VALENCIENNESIA, and ELEOTRIODES have been confused by Bleeker. VALENCIENNEA appeared (1868) without diagnosis, with mention only of ELEOTRIS HASSELTI Blkr. As this was a previously known species, the name may be regarded as established and the species in question as its type. Later in 1868 VALENCIENNESIA appears also without explanation, in connection with ELEOTRIS STRIGATA Blkr. Meanwhile, the name ELEOTRIODES had been given in 1857, in the same way, without diagnosis, to ELEOTRIS SEXGUTTATA Cuv. & Val. In 1874 Bleeker makes ELEOTRIODES a synonym of VALENCIENNESIA, with E. STRIGATA as type, and still later in 1874, in his *Esquisse Général,* ELEOTRIODES appears as a separate genus, its type being specified as ELEOTRIS HELDSDINGENI Blkr. Clearly Bleeker regarded these earlier names as names only, but as each of them refers to a species already known, they must have place in the system. That VALENCIENNEA, 1868 (HASSELTI), is distinct from ELEOTRIODES, 1857 (SEXGUTTATA), is quite probable.

Eleotriodes Bleeker IX, 307; orthotype E. HELSDINGENI Blkr. (not ELEOTRIODES Blkr., 1857).

Orthostomus (Kner) Bleeker, IX, 308; orthotype GOBIUS AMBLYOPINUS Kner.

Oxymetopon Bleeker, IX, 308; orthotype O. TYPUS Blkr.

Pseudogobiodon Bleeker, IX, 309; orthotype GOBIUS CITRINUS Rüppell.

Paragobiodon Bleeker, IX, 309; orthotype GOBIUS MELANOSOMA Blkr. Replaces RUPPELLIA Sw., preoccupied.

Alepidogobius Bleeker, IX, 310; orthotype GOBIOSOMA FASCIATUM Playfair.

Gobiopterus Bleeker, IX, 311; orthotype APOCRYPTES BRACHYPTERUS Blkr.

Leptogobius Bleeker, IX, 311; orthotype GOBIUS OXYPTERUS Blkr.

Triænopogon Bleeker, IX, 312; orthotype TRIÆNOPHORICHTHYS BARBATUS Gthr.

Sicydiops Bleeker, IX, 314; orthotype SICYDIUM XANTHURUS Blkr.

Microsicydium Bleeker, IX, 314; orthotype SICYDIUM GYMNAUCHEN Blkr.

Brachygobius Bleeker, IX, 315; orthotype GOBIUS DORIÆ Gthr.

Callogobius Bleeker, IX, 315; orthotype ELEOTRIS HASSELTI Blkr. A synonym of VALENCIENNEA.

Platygobius Bleeker, IX, 316; orthotype GOBIUS MACRORHYNCHUS Blkr.

Mesogobius Bleeker, IX, 317; orthotype GOBIUS BATRACHOCEPHALUS Pallas.

Stenogobius Bleeker, IX, 317; orthotype GOBIUS GYMNOPOMUS Blkr.

Oligolepis Bleeker, IX, 318; orthotype GOBIUS MELANOSTIGMA Blkr.

Gnatholepis Bleeker, IX, 318; orthotype GOBIUS ANJERENSIS Blkr.

Hypogymnogobius Bleeker, IX, 318; orthotype GOBIUS XANTHOZONA Blkr.

Hemigobius Bleeker, IX, 319; orthotype GOBIUS MELANURUS Blkr.

Actinogobius Bleeker, IX, 319; orthotype GOBIUS OMMATURUS Blkr.

Cephalogobius Bleeker, IX, 320; orthotype GOBIUS SUBLITUS Cantor.

Centrogobius Bleeker, IX, 321; orthotype GOBIUS NOTACANTHUS Blkr. Same as OPLOPOMUS Steind., not OPLOPOMA Grd.

Acentrogobius Bleeker, IX, 321; orthotype GOBIUS CHLOROSTIGMA Blkr.

Porogobius Bleeker, IX, 321; orthotype GOBIUS SCHLEGELI Gthr.

Amblygobius Bleeker, IX, 322; orthotype GOBIUS SPHINX Blkr.

Cryptocentrus (Ehrenberg), Bleeker, IX, 322; orthotype GOBIUS CRYPTOCENTRUS Cuv. & Val. Same as PARAGOBIUS Blkr.

Zonogobius Bleeker, IX, 323; orthotype GOBIUS SEMIFASCIATUS Kner.

Odontogobius Bleeker, IX, 323; orthotype GOBIUS BYNOËNSIS Blkr.

Stigmatogobius Bleeker, IX, 323; orthotype GOBIUS PLEUROSTIGMA Blkr.

Amblychæturichthys Bleeker, IX, 324; orthotype CHÆTURICHTHYS HEXANEMA Blkr.

Parachæturichthys Bleeker, IX, 325; orthotype CHÆTURICHTHYS POLYNEMA Blkr.

Periophthalmodon Bleeker, IX, 326; orthotype GOBIUS SCHLOSSERI Pallas = GOBIUS BARBARUS L. A synonym of PERIOPHTHALMUS Bl. & Schn., as restricted by Gill, 1863.

Apocryptodon Bleeker, IX, 327; orthotype APOCRYPTES MADURENSIS Blkr.

Parapocryptes Bleeker, IX, 327; orthotype APOCRYPTES MICROLEPIS Blkr.

Gobileptes (Swainson) Bleeker, IX, 327; type APOCRYPTES BATO Cuv. & Val. The first assignment of type, but evidently not the species Swainson had in mind as GOBILEPTES.

Pseudapocryptes Bleeker, IX, 328; orthotype APOCRYPTES LANCEOLATUS Cantor.

Brachyamblyopus Bleeker, IX, 329; orthotype AMBLYOPUS BRACHYSOMA Blkr.

Odontamblyopus Bleeker, IX, 330; orthotype GOBIOIDES RUBICUNDUS Ham.

Trypauchenichthys Bleeker, IX, 331; orthotype T. TYPUS Blkr.; replaces CTENOTRYPAUCHEN Steind.

1116. BLEEKER (1874). *Révision des espèces d'Ambassis et de Parambassis de l'Inde archipélagique.* Nat. Verh. Holl. Maatsch. Wetensch., 3. verz., II, 1874, 83-106.

PIETER BLEEKER.

Parambassis Bleeker, 102 (19, reprint); orthotype AMBASSIS APOGONIDES Blkr.

1117. BLEEKER (1874). *Révision des espèces insul-indiennes de la famille des Synanceoides.* Nat. Verh. Holl. Maatsch. Wetensch., 3. verz., II, 1874, 1-22.

PIETER BLEEKER.

Synanchia (Swainson) Bleeker, 11; orthotype SYNANCEIA EROSA Cuv. & Val. A synonym of EROSA Sw. SYNANCHIA Sw. is plainly only a "wilful misprint" for SYNANCEIA. In any case, EROSA occurs on an earlier page in the same work and was intended for the same species.

Leptosynanceia Bleeker, 17; orthotype SYNANCIA ASTROBLEPA Rich. In this paper Bleeker cancels his earlier genus SYNANCEICHTHYS (VERRUCOSA), regarding it as intergrading with SYNANCEJA (HORRIDA). But the two seem fairly separable. The earliest subdivision of SYNANCEJA, that of Müller in 1843, leaves VERRUCOSA as the type of SYNANCEJA, S. HORRIDA being set off as SYNANCIDIUM. This arrangement apparently must stand. SYNANCEICHTHYS, with SPURCO (Commerson) and EMMYDRICHTHYS Jordan and Snyder, become synonyms of SYNANCEJA.

1118. COPE (1874). *On Some Batrachians and Nematognathi Brought from the Upper Amazon by Prof. Orton.* Proc. Acad. Nat. Sci. Phila., 1874, 120-137.

EDWARD DRINKER COPE.

Dysichthys Cope, 133; orthotype D. CORACOIDEUS Cope.

1119. COPE (1874). *On the Plagopterinæ and the Ichthyology of Utah.* Proc. Amer. Philos. Soc., XIV, 122-139.

EDWARD DRINKER COPE.

Plagopterus Cope, 130; orthotype P. ARGENTISSIMUS Cope.
Lepidomeda Cope, 131; orthotype L. VITTATA Cope.

1120. COPE (1874). *Description of Some Species of Reptiles Obtained by Dr. John F. Bransford, Assistant Surgeon United States Navy, . . . Nicaragua,* etc. Proc. Acad. Nat. Sci. Phila., 1874, 64-72.

EDWARD DRINKER COPE.

Protistius Cope, 66; orthotype P. SEMOTILUS Cope.

1121. COPE (1874). *Review of the Vertebrata of the Cretaceous Period Found West of the Mississippi River.* Bull. U. S. Geol. Surv. Terr., I.

EDWARD DRINKER COPE.

Pelecorapis Cope, 39; orthotype P. VARIUS Cope (fossil).
Tetheodus Cope, 43; orthotype T. PEPHREDO Cope (fossil).
Sporetodus Cope, 47; orthotype S. JANEVAII Cope. A synonym of PTYCHODUS Ag.

1122. DYBOWSKI (1874). *Fische des Baikal-Wassersystemes.* Verh. K.-K. Zool.-Bot. Ges. Wien, XXIV.

BENEDIKT IVAN DYBOWSKI

Leucichthys Dybowski, 390; logotype SALMO OMUL Pallas, nearly or quite identical with ARGYROSOMUS Ag., which is preoccupied and replaced by THRISSOMIMUS Gill.

1123. GILL (1874). *On the Identity of Esox lewini With the Dinolestes mülleri of Klunzinger.* Am. Mag. Nat. Hist., XIV.

THEODORE GILL.

Gobiopus Gill, XIV, 159; orthotype not stated, a goby with the "first dorsal fin atrophied," as in LUCIOGOBIUS and LEUCOPSARION. Apparently a synonym of LUCIOGOBIUS Gill.

1124. GÜNTHER (1874). *Descriptions of New Species of Fishes in the British Museum.* Ann. Mag. Nat. Hist., 1874, XIV, 368-371; 453-475.

ALBERT GÜNTHER.

Rhamphocottus Günther, 369; orthotype R. RICHARDSONI Gthr.
Gastromyzon Günther, 454, 453-475; orthotype G. BORNEENSIS Gth.

1125. HAAST (1874). *On Cheimarrichthys forsteri, a New Genus Belonging to the New Zealand Fresh-water Fishes.* Trans. New Zealand Instit., 1874, VI, 103-104.

JOHANN FRANZ JULIUS VON HAAST.

Cheimarrichthys Haast, 103; orthotype C. FORSTERI Haast.

1126. JONES (1874). *A New Fish (Lefroyia bermudensis).* Zoologist, 1874, II, 3837-3838.

JOHN MATTHEW JONES.

Lefroyia Jones, 3837; orthotype L. BERMUDENSIS Jones. A synonym of CARAPUS Raf. (FIERASFER Cuv.).

1127. KESSLER (1874). *Pisces.* (In *Fedtschensko's Expedition to Turkestan.* Zoogeographical Researches.) Bull. Soc. Sci. Moscou, 1874, XI, 1-63.

KARL THEODOROVICH KESSLER (1815-1881).

An[illegible]
Cr[illegible]

Zo[illegible] [illegible] *Rein-*
Od[illegible] [illegible]
St[illegible] [illegible] Kjøbenhavn, 1874,
A[illegible]
Pa[illegible]
Pe[illegible]

[illegible] *J. Rein-*
A[illegible] [illegible]
P[illegible] [illegible] Forh. Kjøben-
G[illegible]

[illegible] *dans la zone*

[illegible] = [illegible]

[illegible] *Fische aus der* [illegible] Württemberg, XXX.

[illegible] Bull. [illegible]

[illegible] Sauvage = [illegible] A synonym of

[illegible] II, 332-340.

[illegible] a synonym of [illegible]

[illegible] 1886).

[illegible] Nouv.

Gasterostea Sauvage, 7; orthotype GASTEROSTEUS PUNGITIUS L. A synonym of PYGOSTEUS Brevoort (1861).

Gastræa Sauvage, 7; orthotype GASTEROSTEUS SPINACHIA L. A synonym of SPINACHIA Cuv.

1135. SAUVAGE (1874). *Étude sur les poissons du Lias supérieur de la Lozère et de la Bourgogne.* Rev. Sci. Nat., II.

HENRI ÉMILE SAUVAGE.

Cephenoplosus Sauvage, II, 428; orthotype C. TYPUS Sauvage (fossil). A synonym of PACHYCORMUS Ag.

1136. STEINDACHNER (1874). *Ichthyologische Beiträge.* I. Sitzb. Akad. Wiss. Wien, 1874, LXX, 1. Abth., 355-390.

FRANZ STEINDACHNER.

Pikea Steindachner, 375; orthotype GRYSTES LUNULATUS Guich.

Hemianthias Steindachner, 380; orthotype ANTHIAS PERUANUS Steind.

1137. TRAUTSCHOLD (1874). *Die Kalkbrüche von Mjatschkoeva, etc.* Nouv. Mem. Soc. Imp. Natur., XIII, Moscou.

HERMANN VON TRAUTSCHOLD (1817-1902).

Solenodus Trautschold, 293; orthotype S. CRENULATUS Trautschold.

Octinaspis Trautschold, pl. 28; orthotype PETRODUS SIMPLICISSIMUS Trautschold (fossil).

1138. WINKLER (1874). *Mémoire sur les dents de poissons du terrain bruxellien.* Arch. Mus. Teyler, Haarlem.

TIBERIUS CORNELIUS WINKLER.

Plicodus Winkler, III, 301; orthotype GINGLYMOSTOMA THIELENSE Noetling (fossil). A fossil homologue of GINGLYMOSTOMA.

1875

1139. BLEEKER (1875). *Notice sur les Eleotriformes et description de trois espèces nouvelles.* Arch. Néerl. Sci. Nat., X, 1875, 101-112.

PIETER BLEEKER.

Pogoneleotris Bleeker, 107; orthotype ELEOTRIS HETEROLEPIS Gthr.

1140. BLEEKER (1875). *Description du genre Parascorpis et du son espèce-type.* Arch. Néerl. Sci. Nat., 1875, X, 380-382.

PIETER BLEEKER.

Parascorpis Bleeker, 380; orthotype P. TYPUS Blkr.

1141. BLEEKER (1875). *Révision des Sicydiini et Latrunculi de l'Insulindes.* Versl. Acad. Amsterdam, IX.

PIETER BLEEKER.

Leptogobius Bleeker, 22; orthotype GOBIUS OXYPTERUS Blkr. (See also No. 1115.)

1142. BLEEKER (1875). *Recherches sur la faune de Madagascar et de ses dépendances d'après les découvertes de François P. L. Pollen et D. C. van Dam.* 4e Partie. *Poissons de Madagascar et de l'île de la Réunion.* Leiden.

PIETER BLEEKER.

Paracæsio Bleeker, 92; orthotype CÆSIO XANTHURUS Blkr.

Paracirrhites Bleeker, 93; orthotype CIRRHITES FORSTERI Bloch. A synonym of CIRRHITUS Lac.

1143. BLEEKER (1875). *Sur la famille des Pseudochromidoides et révision de ses espèces insulindiennes.* Verh. Akad. Amsterdam, XV, 1875, 1-32.

PIETER BLEEKER.

Paraplesiops Bleeker, 3; orthotype PLESIOPS BLEEKERI Gthr. Replaces BLEECKERIA Castelnau, 1873, preoccupied.

Pseudogramma Bleeker, 24; orthotype P. POLYACANTHUS Blkr.

1144. CASTELNAU (1875). .*Researches on the Fishes of Australia.* Philadelphia Centennial Expedition of 1876. Official Record, etc., 1875.

FRANCIS LAPORTE DE CASTELNAU.

A carelessly prepared paper, as usual with Castelnau. I am under obligation to Mr. Allan R. McCulloch of the Australian Museum for the identification of these and other nominal genera proposed for Australian fishes, by Castelnau, De Vis and others.

Neoniphon Castelnau, 4; orthotype N. ARMATUS Castelnau.

Breviperca Castelnau, 6; orthotype B. LINEATA Castelnau.

Neomesoprion Castelnau, 8; orthotype N. UNICOLOR Castelnau. Apparently a synonym of LUTIANUS Bloch.

Aida Castelnau, 10; orthotype A. INORNATA Castelnau. A synonym of MELANOTÆNIA Gill.

Neolethrinus Castelnau, 11; orthotype N. SIMILIS Castelnau.

Neoblennius Castelnau, 11; orthotype N. FASCIATUS Castelnau.

Neosillago Castelnau, 16; orthotype.N. MARMORATA Castelnau.

Pseudobatrachus Castelnau, 24; orthotype BATRACHUS STRIATUS Castelnau, perhaps identical with BATRACHOMŒUS Ogilby of later date.

Stenophus Castelnau, 27; orthotype S. MARMORATUS Castelnau.

Neogunellus Castelnau, 27; orthotype N. SULCATUS Castelnau. A synonym of OPHICLINUS Castelnau.

Dampieria Castelnau, 30; orthotype D. LINEATA Castelnau; replaces CICHLOPS M. & T., preoccupied; same as LABRACINUS (Schlegel) Blkr., of slightly later date.

Neoatherina Castelnau, 31; orthotype N. AUSTRALIS Castelnau. A synonym of MELANOTÆNIA Gill.

Torresia Castelnau, 36; orthotype T. AUSTRALIS Castelnau. A synonym of CHŒRODON Blkr.

Neoodax Castelnau, 37; orthotype N. WATERHOUSEI Castelnau. A synonym of ODAX Cuv.

Othos Castelnau, 43; orthotype O. CEPHALOTES Castelnau.

Neorhombus Castelnau, 43; orthotype N. UNICOLOR Castelnau.

Neoplotosus Castelnau, 45; orthotype N. WATERHOUSEI Castelnau.

Neoscopelus Castelnau, 46; orthotype SCOPELUS CEPHALOTES Castelnau; name preoccupied.

Blanchardia Castelnau, 47; orthotype B. MACULATA Castelnau. A synonym of NOTOGRAPTUS Gthr.

1145. COLLETT (1875). *Norges fiske, med bemærkninger om deres Udbredelse.* Christiania.

ROBERT COLLETT (1842-1913).

Cottunculus Collett, 20; orthotype C. MICROPS Collett.
Latrunculodes Collett, 60; orthotype GOBIUS NILSSONI Düben & Koren.

1146. COPE (1875). *The Vertebrata of the Cretaceous Formations of the West.* Rept. U. S. Geol. Surv. Terr., 1875, II, 1-303.
EDWARD DRINKER COPE.

Syllæmus Cope, 180; orthotype S. LATIFRONS Cope (fossil).
Isotænia Cope, 222; orthotype I. NEOCESARIENSIS Cope (fossil).
Pelecopterus Cope, II, 244; orthotype ICHTHYODECTES PERNICIOSUS Cope (fossil). A synonym of PROTOSPHYRÆNA Leidy.
Bryactinus Cope, 282; orthotype B. AMORPHUS Cope (fossil). A synonym of EDAPHODON Leidy.
Diphrissa Cope, 283; orthotype ISCHYODUS SOLIDULUS Cope (fossil). A synonym of EDAPHADON.

1147. COPE (1875). *On a New Genus (Osphyolax pellucidus) of Lophobranchiate Fishes.* Proc. Acad. Nat. Sci. Phila., 1875, 450.
EDWARD DRINKER COPE.

Osphyolax Cope, 450; orthotype O. PELLUCIDUS Cope. Apparently a synonym of NEROPHIS Raf.

1148. DAY (1875). *The Fishes of India.*
FRANCIS DAY.

Pseudosynanceia Day, 163; orthotype P. MELANOSTIGMA Day.

1149. FRITSCH (1875). *Ueber die fauna der Gaskohle des Pilsner und Rakonitzer Beckens.* Sitzb. Königl. Böhm. Ges. Wiss. Prag.
ANTON JAN FRITSCH (1832-1914).

Osmerolepis Fritsch, IX, 70; orthotype O. RETICULATA Fritsch (fossil).

1150. NEWBERRY (1875). *Descriptions of Fossil Fishes.* Rept. Geol. Surv. Ohio, 1875, II, pt. 2 (Palæontology), 1-64.
JOHN STRONG NEWBERRY.

Asterosteus Newberry, 35; orthotype A. STENOCEPHALUS Newberry (fossil).
Acanthaspis Newberry, 36; orthotype A. ARMATUS Newberry.
Acantholepis Newberry, 38; orthotype A. PUSTULOSUS Newberry. Name preoccupied, replaced by ECZEMATOLEPIS Miller, 1892.
Platyodus Newberry, 58; orthotype P. LINEATUS Newberry.
Heliodus Newberry, 62; logotype H. LESLEYI Newberry (fossil). A synonym of PALÆDAPHUS Van Beneden.

1151. PETERS (1875). *Ueber eine neue mit Halieutæa verwandte Fischgattung, Dibranchus, aus dem atlantischen Ocean,* etc. Monatsb. Akad. Wiss. Berlin, 1875 (1876), 736-742.
WILHELM CARL HARTWIG PETERS.

Dibranchus Peters, 736; orthotype D. ATLANTICUS Peters.

1152. POEY (1875). *Enumeratio piscium cubensium.* Anal. Soc. Española Hist. Nat. Madrid, 1875, IV, 75-161; V, 131-218 (1876).
FELIPE POEY Y ALOY.

Moharra Poey, 124; orthotype GERRES RHOMBEUS Cuv. A section under DIAPTERUS Ranzani.
Microgobius Poey, V, 168; orthotype M. SIGNATUS Poey.

1153. SAUVAGE (1875). *Note sur les poissons fossiles.* Bull. Soc. Géol. France, 1875, sér. 3, III, 631-642.
HENRI ÉMILE SAUVAGE.

Lepidocottus Sauvage, 637; orthotype COTTUS ARIES Ag. (fossil).

Paraperca Sauvage, 639; orthotype P. PROVINCIALIS Sauvage (fossil).

Trachinopsis Sauvage, 641; orthotype T. IBERICA Sauvage (fossil).

1154. ST. JOHN & WORTHEN (1875). *Description of Fossil Fishes.* Geol. Surv. Ill., 1875, VI, 245-488.
ORESTES H. ST. JOHN; A. H. WORTHEN.

Phœbodus St. John & Worthen, 251; orthotype P. SOPHIÆ St. John & Worthen (fossil).

Bathycheilodus St. John & Worthen, 252; orthotype B. MACISAACSI St. John & Worthen (fossil). A synonym of PHŒBODUS St. John & Worthen.

Lambdodus St. John & Worthen, 280; orthotype L. COSTATUS St. John & Worthen (fossil).

Hybocladodus St. John & Worthen, 284; orthotype H. PLICATILIS St. John & Worthen (fossil).

Thrinacodus St. John & Worthen, 289, orthotype T. NANUS St. John & Worthen (fossil).

Mesodmodus St. John & Worthen, 290 logotype M. EXSCULPTUS St. John & Worthen (fossil).

Agassizodus St. John & Worthen, 311; orthotype LOPHODUS VARIABILIS St. John & Worthen (fossil). Substitute for LOPHODUS Newberry & Worthen, preoccupied. Both are synonyms of CAMPODUS Koninck, 1844.

Periplectrodus St. John & Worthen, 325; logotype P. WARRENI St. John & Worthen (fossil).

Stemmatodus St. John & Worthen, 330; logotype S. CHEIRIFORMIS St. John & Worthen (fossil). Name preoccupied, replaced by STEMMATIAS Hay, 1899.

Leiodus St. John & Worthen, 335; logotype L. CALCARATUS St. John & Worthen (fossil). Not LEIODON Sw.

Desmiodus St. John & Worthen, 341; orthotype D. TUMIDUS St. John & Worthen (fossil).

Venustodus St. John & Worthen, 344; orthotype CHOMATODUS VENUSTUS Leidy = V. LEIDYI St. John & Worthen (fossil).

Harpacodus St. John & Worthen, 354; orthotype H. OCCIDENTALIS St. John & Worthen.

Lisgodus St. John & Worthen, 363; logotype L. CURTUS St. John & Worthen (fossil). Perhaps a synonym of PETALODUS.

Tanaodus St. John & Worthen, 367; logotype T. BELLICINCTUS St. John & Worthen (fossil).

Calopodus St. John & Worthen, 403; orthotype; C. APICALIS St. John & Worthen (fossil).

Fissodus St. John & Worthen, 413; orthotype F. BIFIDUS St. John & Worthen (fossil).

Cholodus St. John & Worthen, 415; orthotype C. INÆQUALIS St. John & Worthen (fossil). Perhaps a synonym of FISSODUS St. John & Worthen.

Acondylacanthus St. John & Worthen, 432; logotype A. GRACILIS St. John & Worthen (fossil).

Geisacanthus St. John & Worthen, 440; orthotype G. STELLATUS St. John & Worthen (fossil). A synonym of COSMACANTHUS Ag.

Bythiacanthus St. John & Worthen, 444; orthotype B. VANHORNEI St. John & Worthen (fossil).

Glymmatacanthus St. John & Worthen, 446; orthotype G. IRISHI St. John & Worthen (fossil).

Amacanthus St. John & Worthen, 464; orthotype HOMACANTHUS GIBBOSUS Newberry & Worthen (fossil).

Marracanthus St. John & Worthen, 465; orthotype HOMACANTHUS RECTUS Newberry & Worthen (fossil).

Batacanthus St. John & Worthen, 468; orthotype B. BACULIFORMIS St. John & Worthen.

Gampsacanthus St. John & Worthen, 471; orthotype G. TYPUS St. John & Worthen (fossil).

Lecracanthus St. John & Worthen, 475; orthotype L. UNGUICULUS St. John & Worthen (fossil).

1155. SAUVAGE (1875). *(Poissons fossiles.)* Bibl. École des Hautes Études, XIII.

HENRI ÉMILE SAUVAGE.

Heterothrissops, Sauvage, 46; orthotype H. INTERMEDIUS Sauvage (fossil). A synonym of EUTHYNOTUS Wagner.

Pseudothrissops Sauvage, 46; orthotype P. MICROPTERUS Sauvage = ESOX INCOGNITUS Blainv. (fossil). A synonym of EUTHYNOTUS.

1156. STEINDACHNER (1875). *Beiträge der Kenntniss der Chromiden des Amazonenstromes.* Sitzb. Akad. Wiss. Wien, 1875, LXXI, 61-137.

FRANZ STEINDACHNER.

Acaropsis Steindachner, 99; orthotype ACARA NASSA Heckel.

Crenicara Steindachner, 99; orthotype C. ELEGANS Steind.

Dicrossus (Agassiz) Steindachner, 102; orthotype D. MACULATUS Steind.

Saraca Steindachner, 125; orthotype S. OPERCULARIS Steind.

1157. STEINDACHNER (1875). *Ueber eine neue Gattung und Art . . . aus der Familie der Pleuronectiden und über eine neue Thymallus-Art.* Sitzb. Akad. Wiss. Wien, 1875, LXX, 363-371.

FRANZ STEINDACHNER.

Oncopterus Steindachner, 365; orthotype O. DARWINI Steind.

1158. STEINDACHNER (1875). *Ichthyologische Beiträge.* II. Sitzb. Akad. Wiss. Wien.

FRANZ STEINDACHNER

Neolabrus Steindachner, 461; orthotype N. FENESTRATUS Steind.

Atherinella Steindachner, 477 (35, reprint); orthotype A. PANAMENSIS Steind.

1159. STEINDACHNER (1875). *Ichthyologische Beiträge.* III. Sitzb. Akad. Wiss. Wien, 1875 (June), LXXII, 29-96.

FRANZ STEINDACHNER.

Parapsettus Steindachner, 68 (50, reprint); orthotype P. PANAMENSIS Steind.

Neoliparis Steindachner, 72 (54, reprint); orthotype LIPARIS MUCOSUS Ayres.

Atherinops Steindachner, 89; (61, reprint); orthotype ATHERINOPSIS AFFINIS Ayres.

Cottoperca Steindachner, 69; orthotype C. ROSENBERGI Steind.

1160. TRAQUAIR (1875). *On Some Fossil Fishes from the Neighborhood of Edinburgh.* Ann. Mag. Nat. Hist., ser. 4, XV, 258-268.

Ramsay Heatley Traquair.

Nematoptychius Traquair, 259; orthotype Pygopterus greenocki (Ag.) (fossil).

Wardichthys Traquair, 266; orthotype W. cyclosoma Traquair (fossil).

1876.

1161. BLEEKER (1876). *Notice sur les genres Gymnocæsio, Pterocæsio, Paracæsio et Liocæsio.* Versl. Med. Akad. Nat., 1876, 149-154.

Pieter Bleeker.

Gymnocæsio Bleeker, 152; orthotype Cæsio gymnopterus Blkr.

Pterocæsio Bleeker, 153; orthotype Cæsio multiradiatus Steind.

Liocæsio Blkr., 153; orthotype Cæsio cylindricus Blkr.

1162. BLEEKER (1876). *Sur la famille des Pseudochromidoides et révision de ses espèces insulindiennes.* Verh. Akad. Amsterdam, XV, 1-32.

Pieter Bleeker.

Leptochromis Bleeker, 21; orthotype Pseudochromis cyanotænia Blkr.

1163. BLEEKER (1876). *Systema Percarum revisum.* Arch. Néerl. Sci. Nat., XI, 1876, Pars I, 247-288; Pars II, 289-340.

Pieter Bleeker.

Phæthonichthys Bleeker, 256; orthotype Serranus phæton Cuv., a fallacious specimen with the tail of a Fistularia fastened on the body of a Cephalopholis. A synonym of Cephalopholis (same as Uriphæton Sw.)

Percamia Bleeker, 260; orthotype Microperca yarræ Castelnau, substitute for Microperca Castelnau, preoccupied by Microperca Putnam 1863.

Telescops Bleeker, 261; orthotype Pomatomus telescopium Risso. Substitute for Pomatomus Cuvier, not of Lacépède. A synonym of Epigonus Raf.

Oxylabrax Bleeker, 264; orthotype Sciæna undecimalis Bloch. Name offered as a substitute for Centropomus Lac., as the first species named under Centropomus belongs to another genus.

Mesopristes Bleeker, 267; orthotype M. macracanthus Blkr. (Note in passing, a synonym of Datnia Cuv.)

Paristiopterus Bleeker, 268; orthotype Richardsonia insignis Castelnau = Histiopterus labiosus Gthr. A substitute for Richardsonia Castelnau, 1872, preoccupied.

Pseudopentaceros Bleeker, 270; orthotype Pentaceros richardsoni Smith. Replaces Gilchristia Jordan.

Paradentex Bleeker, 278; orthotype Gymnocranius rivulatus Klunzinger. A synonym of Gymnocranius Klunzinger.

Paraconodon Bleeker, 272; orthotype Conodon pacifici Gthr.

Mænas (Klein) Bleeker, 273; orthotype Sparus mæna L. = Mæna vulgaris Cuv. & Val. A synonym of Mæna Cuv.

Hemilutjanus Bleeker, 277; orthotype Plectropoma macrophthalmus Tschudi. This name is no doubt badly chosen, but it cannot be replaced by Pomodon Boulenger, 1895.

Banjos Bleeker, 277; orthotype Anoplus banjos Richardson = Banjos typus Blkr. A substitute for Anoplus T. & S., preoccupied.

Synagris (Klein) Bleeker, 278; orthotype DENTEX VULGARIS Cuv. & Val. A synonym of DENTEX Cuv.

Puntazzo Bleeker, 284; orthotype CHARAX PUNTAZZO Cuv. & Val. = P. ANNULARIS Blkr. A substitutue for CHARAX Risso, regarded as preoccupied by CHARAX Gronow (1763).

Mænichthys (Kaup) Bleeker, 291; orthotype DITREMA TEMMINCKI Blkr. (passing reference in synonymy). A synonym of DITREMA T. & S.

Pseudambassis Bleeker, 292; orthotype CHANDA LALA Ham.

Therapaina (Kaup) Bleeker, 298; orthotype CHÆTODON STRIGATUS Langsdorff (passing notice in synonymy). A synonym of MICROCANTHUS Sw.

Helotosoma (Kaup) Bleeker, 298; orthotype H. SERVUS Kaup, said to be ATYPUS STRIGATUS Gthr. A synonym of ATYPICHTHYS Gthr.

Cæsiosoma (Kaup, 1863) Bleeker, 299; orthotype C. SIEBOLDI Kaup = SCORPIS ÆQUIPINNIS Rich., said to be a synonym of SCORPIS.

Tylometopon (Van Beneden) Bleeker, 299; orthotype BRAMA RAJII Bl. & Schn. (passing notice in synonymy). A synonym of BRAMA Cuv.

Hemitaurichthys Bleeker, 304; orthotype CHÆTODON POLYLEPIS Blkr.

Chelmonops Bleeker, 304; orthotype CHÆTODON TRUNCATUS Kner.

Tetragonoptrus (Klein) Bleeker, 305; orthotype CHÆTODON STRIATUS L. A synonym of CHÆTODON L. as understood.

Chætodontops Bleeker, 304; orthotype CHÆTODON COLLARIS Bloch.

Lepidochætodon Bleeker, 306; orthotype CHÆTODON UNIMACULATUS Bloch.

Oxychætodon Bleeker, 306; orthotype CHÆTODON LINEOLATUS Q. & G.

Gonochætodon Bleeker, 306; orthotype CHÆTODON TRIANGULUM Kuhl & Van Hasselt.

Chætodontoplus Bleeker, 307; orthotype HOLACANTHUS SEPTENTRIONALIS T. & S.

Acanthochætodon Bleeker, 308; orthotype HOLACANTHUS ANNULARIS Lac.

Amblytoxotes Bleeker, 311; orthotype TOXOTES SQUAMOSUS Hutton.

Labracinus (Schlegel) Bleeker, 320; orthotype CICHLOPS CYCLOPHTHALMUS M. & T. Same as CICHLOPS M. & T., preoccupied. Passing notice in synonymy. A synonym of DAMPIERIA Castelnau, 1875.

Pteronemus (Van der Hoeven) Bleeker, 315; orthotype CHEILODACTYLUS FASCIATUS Lac.) (notice in synonymy). A synonym of CHEILODACTYLUS Lac.

Cirrhiptera (Kuhl & Van Hasselt) Bleeker, 322; (orthotype PLESIOPS NIGRICANS Rüppell) (note in synonymy). A synonym of PLESIOPS Cuv.

Larimodon (Kaup MS., 1862) Bleeker, 329; orthotype CORVINA DENTEX Cuv. & Val. (misprinted LAMNODON in a later paper). A synonym of ODONTOSCION Gill.

Paraplesiops Bleeker, 332; orthotype PLESIOPS BLEEKERI Gthr.

Brachymullus Bleeker, 333; orthotype UPENEUS TETRASPILUS Gthr.

Paraplesichthys (Kaup, 1862) Bleeker, 335; orthotype ANCYLODON PARVIPINNIS Gill (note in synonymy). A synonym of ISOPISTHUS Gill.

Bogota (Blyth) Bleeker, 336; passing reference. A synonym of PRIACANTHUS Cuv.

Macrocephalus (Browne) Bleeker, 336; orthotype SCIÆNA UNDECIMALIS Bloch. A substitute for CENTROPOMUS Lac. and OXYLABRAX Blkr. on the supposition that the names in the reprint of Browne's *Jamaica*, 1789, would be allowed as eligible.

1164. BLEEKER (1876). *Description de quelques espèces insulindiennes inédites des genres Oxyurichthys, Paroxyurichthys et Cryptocentrus.* Verh. Akad. Amsterdam (2) IX, 1876, 138-148.

PIETER BLEEKER.

Paroxyurichthys Bleeker, 140; orthotype P. TYPUS Blkr.

1165. BLEEKER (1876). *Genera familiæ Scorpænoideorum conspectus analyticus.* Versl. Akad. Amsterdam (2) IX, 1876, 294-300.

PIETER BLEEKER.

Parascorpæna Bleeker, 296; orthotype SCORPÆNA PICTA Kuhl & Van Hasselt.

Parapterois Bleeker, 296; orthotype PTEROIS HETERURUS Blkr.

Paracentropogon Bleeker, 297; orthotype APISTUS LONGISPINIS Cuv. & Val. Probably to be regarded as a synonym of HYPODYTES Gistel.

Pseudopterus (Klein) Bleeker, 296; orthotype (after Klein) GASTEROSTEUS VOLITANS L. A synonym of PTEROIS Cuv.

Amblyapistus Bleeker, 297; orthotype APISTUS TÆNIANOTUS Cuv. & Val.

Pteroidichthys Bleeker, 297; orthotype P. AMBOINENSIS Blkr.

Cottapistus Bleeker, 298; orthotype APISTUS COTTOIDES Cuv. & Val.

Paraploactis Bleeker, 300; orthotype P. TRACHYDERMA Blkr.

1166. BLEEKER (1876). *Notice sur les genres et les espèces des Chætodontoides de la sous-famille des Taurichthyiformes.* Versl. Akad. Amsterdam (2) X, 308-320.

PIETER BLEEKER.

Hemichætodon Bleeker, 313; orthotype CHÆTODON CAPISTRATUS Bloch.

1167. BLEEKER (1876). *Description de quelques espèces inédites de Pomacentroides de l'Inde Archipélagique.* Versl. Akad. Amsterdam.

PIETER BLEEKER.

Paraglyphidodon Bleeker, XII, 38; orthotype P. OXYCEPHALUS Blkr.

1168. CASTELNAU (1876). *Mémoire sur les poissons appelés barramundi par les aborigènes du nord-est de l'Australie.* Journ. Zool. (Gervais), 1876, V, 129-136.

FRANCIS L. CASTELNAU.

Neoceratodus Castelnau, 132; orthotype N. BLANCHARDI Castelnau. Prof. W. Baldwin Spencer of the University of Melbourne regards NEOCERATODUS BLANCHARDI as an unknown or perhaps fictitious fish, not to be identified with the Dipneustan, CERATODUS FORSTERI Krefft, which is the type of the genus EPICERATODUS Teller. Mr. McCulloch, however, thinks that EPICERATODUS is a synonym of NEOCERATODUS, Castelnau's account being an inaccurate description of the same fish. NEOCERATODUS BLANCHARDI is said to come from Fitzroy River, where the FORSTERI does not exist. According to Professor Spencer, the name BARRAMUNDA or BARRAMUNDI, used by Castelnau, belongs to the Serranoid fish SCLEROPAGES LEICHARDTI, a valuable foodfish, which EPICERATODUS is not.

1169. COPE & YARROW (1876). *Report on the Collections of Fishes Made in Portions of Nevada, etc., in 1871-1874, by Prof. E. D. Cope and Dr. H. C. Yarrow.* Wheeler's Survey West of 100th Meridian, VI, Zoölogy.

EDWARD DRINKER COPE; HENRY CRÉCY YARROW.

Eritrema Cope, 645; orthotype APOCOPE HENSHAVII Cope. A synonym of APOCOPE Cope.

Pantosteus Cope, 673; orthotype MINOMUS PLATYRHYNCHUS Cope.

1170. COPE (1876). *On a New Genus of Fossil Fishes (Cyclotomodon vagrans).* Proc. Acad. Nat. Sci. Phila, 1876, V, 356-357.
EDWARD DRINKER COPE.

Cyclotomodon Cope, 355; orthotype C. VAGRANS Cope (fossil).

1171. COPE (1876). *Description of Some Vertebrate Remains from the Fort Union Beds of Montana.* Proc. Acad. Nat. Sci. Phila., 1876.
EDWARD DRINKER COPE.

Hedronchus Cope, 259; orthotype H. STERNBERGI Cope. A tooth, perhaps not of a fish.

Myledaphus Cope, 260; orthotype M. BIPARTITUS Cope.

1172. DAVIS (1876). *On a Bone Bed in the Lower Coal Measures,* etc. Quart. Journ. Geol. Soc., XXXII, 332-340.
JAMES WILLIAM DAVIS (1846-1893).

Hoplonchus Davis, XXXII, 336; orthotype H. ELEGANS Davis (fossil).

1173. DAY (1876). *The Fishes of India.* (Part 2.)
FRANCIS DAY.

Apocryptichthys Day, 302; orthotype APOCRYPTES CANTORIS Day.

Nangra Day, 494; orthotype N. PUNCTATA Day.

1174. EGERTON (1876). *Notice of Harpactes velox, a Predaceous Ganoid Fish . . . from the Lias of Lyme Regis.* Geol. Mag.
PHILIP DE MALPAS GREY EGERTON.

Harpactes Egerton, 441; orthotype HARPACTES VELOX Egerton (fossil). Name preoccupied, later replaced by HARPACTIRA Egert.; a synonym of OSTEORACHIS Egert.

Harpactira Egerton, 576; orthotype H. VELOX Egert. = OSTEORACHIS MACROCEPHALUS Egert. (fossil). Name a substitute for HARPACTES. preoccupied; a synonym of OSTEORACHIS Egert.

1175. GOODE (1876). *Catalogue of the Fishes of the Bermudas,* etc. Bull. U. S. Nat. Mus., V.
GEORGE BROWN GOODE (1851-1896).

Pareques (Gill) Goode, 50; orthotype GRAMMISTES ACUMINATUS Bl. & Schn.

1176. GÜNTHER (1876). *Remarks on Fishes, With Descriptions of New Fishes in the British Museum, Chiefly from Southern Seas.* Ann. Mag. Nat. Hist., 1876, ser. 4, XVII, 389-472.
ALBERT GÜNTHER.

Holoxenus Günther, 393; orthotype H. CUTANEUS Gthr. A synonym of GNATHANACANTHUS Blkr.

Neophrynichthys Günther, 396; orthotype PSYCHROLUTES LATUS Hutton.

1177. GÜNTHER (1876). *Contributions to Our Knowledge of the Fish-Fauna of the Tertiary Deposits of the Highlands of Pedang, Sumatra.* Geol. Mag., 1876, II, dec. 3, 433-440.
ALBERT GÜNTHER.

Hexapsephus Günther, 439; orthotype H. GUENTHERI Woodw. (fossil).

1178. JORDAN (1876). *Concerning the Fishes of the Ichthyologia Ohiensis.* Bull. Buffalo Soc. Nat. Hist., 1876, 91-97.
DAVID STARR JORDAN (1851-).

Erimyzon Jordan, 95; orthotype Cyprinus oblongus Mitchill.

1179. JORDAN (1876). *Manual of the Vertebrates of the Northern United States, Including the District East of the Mississippi River and North of North Carolina and Tennessee, Exclusive of Marine Species.*

David Starr Jordan.

Eutychelithus Jordan, 242; orthotype Corvina richardsoni Cuv. & Val., a deformed example of Aplodinotus grunniens (Raf.) A synonym of Aplodinotus Raf.

Eucalia Jordan, 248; orthotype Gasterosteus inconstans Kirtland. (Also in *Proc. Acad. Nat. Sci. Phila.*, 1877, 65.)

Erinemus Jordan, 279; orthotype Ceratichthys hyalinus Cope = Rutilus amblops Raf. A synonym of Hybopsis Ag.

Lythrurus Jordan, 272; orthotype "Semotilus diplæmius Raf." = Alburnus umbratilis Grd. = Notropis lythrurus Jordan. S. diplæmius Raf. is something different.

1180. KESSLER (1876). *Description of Fishes Collected by Col. Prejevalsky in Mongolia.* (Text in Russian.) (In *Prejevalsky, N. Mongolia i Strana Tangutov.* II, pt. 4, 1-36.)

Karl Theodorovich Kessler.

Megagobio Kessler, 16; orthotype M. nasutus Kessler.

1181. NELSON (1876). *A Partial Catalogue of the Fishes of Illinois.* Bull. Ill. Mus. Nat. Hist., 1876, I, 33-52.

Edward William Nelson (1855-).

Sternotremia Nelson, 39; orthotype S. isolepis Nelson, the young of Aphredoderus sayanus, the vent farther back. A synonym of Aphredoderus Le Sueur.

1182. MARCK (1876). *Fossile Fische von Sumatra.* Palæontologia, XXII.

W. von der Marck.

Protosyngnathus von der Marck, XXII, 406; orthotype P. sumatrensis Marck (fossil). A fossil homologue of Aulorhynchus Gill.

1183. OWEN (1876). *Catalogue of Fossils.* Report on South Africa.

Richard Owen.

Hypterus Owen, IX, orthotype H. baini Owen (fossil). Names only; quoted by Woodward, 1891, as a synonym of Atherstonia Woodw., 1889.

1184. PETERS (1876). *Uebersicht der während der von 1874 bis 1876 unter der Commando des Hrn. Capitän z. S. Freiherrn von Schleinitz ausgeführten Reise S.M.S. Gazelle . . . Fische.* Monatsb. Akad. Wiss. Berlin, 1876, 831-854.

Wilhelm Carl Hartwig Peters.

Idiacanthus Peters, 846; orthotype I. fasciola Peters.

Stigmatonotus Peters, 838; orthotype S. australis Peters.

1185. STEINDACHNER (1876). *Die Süsswasser Fische der Südöstlichen Brasilien.* III. Sitzb. Akad. Wiss. Wien, LXXIV, November, 1876.

Franz Steindachner.

Wertheimeria Steindachner, 660 (101, reprint); orthotype W. maculata Steind.

Harttia Steindachner, 668 (110, reprint); orthotype H. LORICARIFORMIS Steind.

1186. STEINDACHNER (1876). *Ichthyologische Beiträge.* V. Sitzb. Akad. Wiss. Wien, 1876, LXXIV, 49-240.

FRANZ STEINDACHNER.

Hippoglossina Steindachner, 61 (13, reprint); orthotype H. MACROPS Steind.

Curimatopsis Steindachner, 81; orthotype CURIMATUS MICROLEPIS Steind.

Lutkenia Steindachner, 85; orthotype L. INSIGNIS Steind. Name preoccupied; replaced by STICHANODON Eigenmann, 1903.

Paragoniates Steindachner, 117 (69, reprint); orthotype P. ALBURNUS Steind.

Pimelodina Steindachner, 149 (101, reprint); orthotype P. FLAVIPINNIS Steind.

Lophiosilurus Steindachner, 155 (106, reprint); orthotype L. ALEXANDRI Steind.

Achiropsis Steindachner, 158 (110, reprint); orthotype SOLEA NATTERERI Steind.

Cynolebias Steindachner, 172 (124, reprint); orthotype C. POROSUS Steind.

Siphagonus Steindachner, 188 (140, reprint); orthotype AGONUS SEGALIENSIS Tilesius. A synonym of BRACHYOPSIS Gill.

Blakea Steindachner, 196 (148, reprint); orthotype MYXODES ELEGANS Cooper. A synonym of GIBBONSIA Cooper.

Bembrops Steindachner, 211 (163, reprint); orthotype B. CAUDIMACULA Steind.

1877

1187-1188. ALLEYNE & MACLEAY (1877). *The Ichthyology of the Chevert Expedition.* Proc. Linn. Soc. New S. Wales, 1877, 261-268; 321-359.

HAYNES GIBBES ALLEYNE; WILLIAM MACLEAY.

Pseudolates Alleyne & Macleay, 262; orthotype P. CAVIFRONS Alleyne & Macleay = HOLOCENTRUS CALCARIFER Bloch. A synonym of LATES Cuv.

Homalogrystes Alleyne & Macleay, 268; orthotype H. GUENTHERI Alleyne & Macleay. A synonym of ACANTHOCHROMIS Gill.

Gerreomorpha Alleyne & Macleay, 274; orthotype G. ROSTRATA Alleyne & Macleay.

Heptadecacanthus Alleyne & Macleay, 343; orthotype H. LONGICAUDUS Alleyne & Macleay. A synonym of ACANTHOCHROMIS Gill.

Cheilolabrus Alleyne & Macleay, 345; orthotype C. MAGNILABRUS Alleyne & Macleay. A synonym of THALLIURUS Sw. = HEMIGYMNUS Gthr.

1189. BLEEKER (1877). *Notice sur les espèces nominales de Pomacentroïdes de l'Inde archipélagique.* Arch. Néerl. Sci. Nat., XII, 1877, 38-41.

PIETER BLEEKER.

Glyphidodontops Bleeker, 41; orthotype GLYPHIDODON ANTJERIUS Blkr. A synonym of CHRYSIPTERA Sw.

1190. BLEEKER (1877). *Mémoire sur les Chromides marins ou Pomacentroïdes de l'Inde archipélagique.* Nat. Verh. Holl. Maatsch. Wetensch., 3 Verz. II, 1877, 1-166.

PIETER BLEEKER.

Parapomacentrus Bleeker, 65; orthotype POMACENTRUS POLYNEMA Blkr.

Amblypomacentrus Bleeker, 68; orthotype POMACENTRUS BREVICEPS Blkr.

Eupomacentrus Bleeker, 73; orthotype POMACENTRUS LIVIDUS Blkr.

Brachypomacentrus Bleeker, 73; orthotype POMACENTRUS ALBIFASCIATUS Blkr.

1191. CASTELNAU (1877). *Australian Fishes. New or Little Known Species.* Proc. Linn. Soc. New S. Wales, 1877, II, 225-248.

FRANCIS LAPORTE CASTELNAU.

Brisbania Castelnau, 241; orthotype B. STAIGERI Castelnau.

Neosilurus Castelnau, 238; orthotype N. AUSTRALIS Castelnau. Name preoccupied, replaced by CAINOSILURUS Macleay.

Neoarius Castelnau, 237; orthotype ARIUS CURTISI Castelnau.

Beridia Castelnau, 229; orthotype B. FLAVA Castelnau. A synonym of GNATHANACANTHUS Blkr.

1192. COPE (1877). *On Some New and Little Known Reptiles and Fishes from the Austroriparian Region.* Proc. Amer. Philos. Soc., XVII.

EDWARD DRINKER COPE.

Xystroplites (Jordan) Cope, 67; orthotype X. LONGIMANUS Cope = POMOTIS HOLBROOKI Cuv. & Val. (In this case Cope suppressed his own proposed generic name in favor of one given almost simultaneously by Jordan.) Jordan's type, X. GILLII, seems to be the same as POMOTIS PALLIDUS Ag.

1193. COPE (1877). *Report on the Geology of the Region of the Judith River, Montana,* etc. Bull. U. S. Geol. Surv., III.

EDWARD DRINKER COPE.

Anogmius Cope, 584; orthotype A. ARATUS Cope, not ANOGMIUS Cope, 1871.

Pelycorapis Cope, 587; orthotype P. VARIUS Cope (fossil).

1194. COPE (1877). *Contribution to the Knowledge of the Ichthyological Fauna of the Green River Shales.* Bull. U. S. Geog. Surv. Terr., 1877, III, 807-819.

EDWARD DRINKER COPE.

Dapedoglossus Cope, 807; orthotype D. TESTIS Cope (fossil). A synonym of PHAREODUS Leidy.

Amphiplaga Cope, 812; orthotype A. BRACHYPTERA Cope (fossil).

Mioplosus Cope, 813; orthotype M. LABRACOIDES Cope (fossil).

Priscacara Cope, 816; orthotype P. SERRATA Cope (fossil).

1195. COPE (1877). *Notice of a New Locality of the Green River Shales Containing Fishes, Insects, and Plants in a Good State of Preservation.* Pal. Bull., XXV.

EDWARD DRINKER COPE.

Diplomystus Cope, 139; orthotype D. DENTATUS (fossil). Name regarded as preoccupied by DIPLOMYSTES Gthr., replaced by COPEICHTHYS Dollo.

1196. COPE (1877). *Descriptions of Extinct Vertebrates from the Permian and Triassic Formations of the United States.* Proc. Amer. Philos. Soc., XVII.

EDWARD DRINKER COPE.

Strigilina Cope, 182; orthotype JANASSA GURLEIANA Cope (fossil). A synonym of JANASSA.

1197. COPE (1877). *On Some New or Little Known Reptiles and Fishes of the Cretaceous, No. 3, of Kansas.* Proc. Amer. Philos. Soc., XVII.

EDWARD DRINKER COPE.

Oricardinus Cope, 177; orthotype O. TORTUS Cope (fossil).

Ptyonodus Cope, 192; orthotype SAGENODUS VINSLOVI Cope (fossil). A synonym of SAGENODUS Owen.

1198. CORNUEL (1877). *Description de débris de poissons fossiles . . . du calcaire neocomien . . . Haute Marne.* Bull. Géol. Soc. France.

J. CORNUEL.

Ellipsodus Cornuel, 617; orthotype E. INCISUS Cornuel (fossil).

1199. DYBOWSKI (1877). *(Fishes.)*

BENEDIKT IVAN DYBOWSKI.

(I have failed to find the work in which these Siberian fishes are described.)

Pristiodon Dybowski, VIII, 26; orthotype P. SIEMIONOVI Dybowski = LEUCISCUS IDELLA Val. A synonym of CTENOPHARYNGODON Steind.

Perccottus Dybowski, VIII, 28; orthotype P. GLENII Dybowski (a goby; allied to GOBIOMORUS Lac.)

1200. FRITSCH (1877). *Die Reptilien und Fische der Böhmischen Kreideformation.* Prag.

ANTON JAN FRITSCH.

Sphœrolepis Fritsch, 46; orthotype S. KOUNOVIENSIS Fritsch (fossil).

1201. GARMAN (1877). *On the Pelvis and External Sexual Organs of Selachians, With Especial Reference to the New Genera Potamotrygon and Disceus.* Proc. Boston Soc. Nat. Hist., 1877, XIX, 197-215.

SAMUEL GARMAN (1846-).

Malacorhina Garman, 203; orthotype RAJA MIRA Garman.

Disceus Garman, 208; orthotype TRYGON STRONGYLOPTERUS Schomburgk.

Potamotrygon Garman, 210; orthotype TRYGON HYSTRIX M. & H.

1202. GILL (1877). *Synopsis of the Fishes of Lake Nicaragua.* Proc. Acad. Nat. Sci. Phila., 1877, 175-218.

THEODORE N. GILL.

Bramocharax Gill, 189; orthotype B. BRANSFORDI Gill.

1203. GILL (1877). *Annual Record of Industry and Science for 1876.*

THEODORE GILL.

Lycichthys Gill, CLXVII; orthotype ANARRHICHAS LATIFRONS Steenstrup & Hallgrimmson.

1204. GILL & JORDAN (1877). *(The Sun-fish.)* Field & Forest, 1877, 190.

THEODORE GILL; DAVID STARR JORDAN.

Eupomotis Gill & Jordan, 190; orthotype SPARUS AUREUS Walbaum = LABRUS GIBBOSUS L.

1205. GÜNTHER (1877). *Preliminary Notes on New Fishes Collected in Japan During the Expedition of H.M.S. Challenger.* Ann. Mag. Nat. Hist., ser. 4, XX, 433-446.

ALBERT GÜNTHER.

Bathythrissa Günther, 443; orthotype B. DORSALIS Gthr. A synonym of PTEROTHRISSUS Hilgendorf a little earlier in the same year.

1206. HILGENDORF (1877). *(Pterothrissus.)* Act. Soc. Leopoldina, III, Sept. 3, 1877.

FRANZ MARTIN HILGENDORF (1839-189?).

Pterothrissus Hilgendorf, 127 (Sept. 3, 1877); orthotype P. GISSU Hilgendorf; replaces BATHYTHRISSA Gthr. (Nov. 1, 1877).

1207. JORDAN (1877). *On the Fishes of Northern Indiana.* Proc. Acad. Nat. Sci. Phila., 1877, 42-82.

DAVID STARR JORDAN.

Imostoma Jordan, 49; orthotype HADROPTERUS SHUMARDI Grd.

Copelandia Jordan, 56; orthotype C. ERIARCHA Jordan, an abnormal variant of ENNEACANTHUS GLORIOSUS (Holbrook). A synonym of ENNEACANTHUS Gill, based on an aberrant specimen. Also in *Bull. Buffalo Soc. Nat. Hist.*, 1877, 136.

Xenotis Jordan, 76; orthotype POMOTIS FALLAX Baird & Girard. A section under LEPOMIS Raf.

1208. JORDAN (1877). *A Partial Synopsis of the Fishes of Upper Georgia.* Ann. Lyc. N. Y., XI, 307-377.

DAVID STARR JORDAN.

Xenisma Jordan, 322; orthotype HYDRARGYRA CATENATA Ag. A subgenus under FUNDULUS.

Helioperca Jordan, 355; orthotype POMOTIS INCISOR Cuv. & Val. = LABRUS PALLIDUS Mitchill. A section under LEPOMIS.

1209. JORDAN (1877). *Notes on Cottidæ, Etheostomatidæ, Percidæ, Centrachidæ, Aphododeridæ, Dorysomatidæ, and Cyprinidæ, with Revisions of the Genera and Descriptions of New or Little Known Species.* Bull. U. S. Nat. Mus., 1877, X, 1-68.

DAVID STARR JORDAN.

Ammocrypta Jordan, 5; orthotype A. BEANI Jordan.

Nanostoma (Putnam) Jordan, 6; orthotype PŒCILICHTHYS ZONALIS Cope; regarded as preoccupied by NANNOSTOMUS Gthr.; replaced by RHOTHŒCA Jordan.

Ericosma Jordan & Copeland, 8; orthotype ALVORDIUS EVIDES Jordan & Copeland. A section under HADROPTERUS Ag.

Rheocrypta Jordan, 9; orthotype R. COPELANDI Jordan. A section under COTTOGASTER Putnam (1863).

Xystroplites Jordan, 24; orthotype X. GILLI Jordan. A section under EUPOMOTIS Gill & Jordan. (See No. 1192.)

Cynoperca Gill & Jordan, 44; orthotype LUCIOPERCA CANADENSIS C. H. Smith.

Mimoperca (Gill & Jordan) Jordan, 44; orthotype PERCA VOLGENSIS Pallas. A synonym of SCHILUS Krynicki (1832).

Elassoma Jordan, 50; orthotype E. ZONATA Jordan. Name (from ἐλασσώμα, a diminution) wrongly expanded to ELASSOSOMA in the *Zoological Record* for 1878.

Asternotremia (Nelson) Jordan, 51; orthotype STERNOTREMIA ISOLEPIS Nelson. A needless substitute name for STERNOTREMIA Nelson, thought to be anatomically not exact. A synonym of APHREDODERUS Le Sueur.

Episema Cope & Jordan, 64; orthotype PHOTOGENIS SCABRICEPS Cope. Name preoccupied, replaced by PARANOTROPIS Fowler.

Elattonistius Gill & Jordan, 67; orthotype HYODON CHRYSOPSIS Rich. = AMPHIODON ALOSOIDES Raf. A synonym of AMPHIODON Raf.

1210. JORDAN (1877). *Catalogue of Fishes of Ohio.* (In J. H. Klippart's *Report of the Fish Commission of Ohio for 1876.* Appendix (1877).

DAVID STARR JORDAN.

Erichæta Jordan, 147; orthotype POMOTIS INCISOR Cuv. & Val. A slip for HELIOPERCA due to uncorrected proof. A section under LEPOMIS.

1211. JORDAN & BRAYTON (1877). *On Lagochila, a New Genus of Catostomoid Fishes.* Proc. Acad. Nat. Sci. Phila., 1877, 280-283.

DAVID STARR JORDAN; ALEMBERT WINTHROP BRAYTON (1849-).

Lagochila Jordan & Brayton, 280; orthotype L. LACERA Jordan & Brayton. Name regarded as preoccupied by LAGOCHEILUS; replaced by QUASSILABIA Jordan & Brayton.

1212. KESSLER (1877). *The Aralo-Caspian Expedition.* IV. *Fishes of the Aralo-Caspio-Pontine Region.* Trans. St. Petersburg Nat. Hist. Soc.

KARL THEODOROVICH KESSLER (1815-1881).

Clupeonella Kessler, 187; orthotype C. GRIMMI Kessler.

1213. LEIDY (1877). *Descriptions of Vertebrate Remains Chiefly from the Phosphate Beds of South Carolina.* Journ. Acad. Nat. Sci. Phila., VIII.

JOSEPH LEIDY.

Mesobatis Leidy, 244; orthotype AËTOBATIS EXIMIUS Leidy (fossil). A synonym or homologue of AËTOBATUS.

Gryphodobatis Leidy, 249; orthotype G. UNCUS Leidy (fossil).

Acrodobatis Leidy, 250; orthotype A. SERRA Leidy (fossil). A homologue of GINGLYMOSTOMA M. & H.

Xiphodolamia Leidy, 252; orthotype X. ENSIS Leidy (fossil).

1214. MALM (1877). *Göteborgs och Bohusläns fauna.* Ryggradsdjuren.

AUGUST WILHELM MALM (1821-1882).

Æglefinus Malm, 481; orthotype GADUS ÆGLEFINUS L. = ÆGLEFINUS LINNÆI Malm. A synonym of MELANOGRAMMUS Gill.

Amblyraja Malm, 607; orthotype RAJA RADIATA Donovan.

Leucoraja Malm, 609; orthotype RAJA FULLONICA L.

1215. MARSH (1877). *Introduction and Succession of Vertebrate Life in America.* Amer. Journ. Sci., XIV.

OTHNIEL CHARLES MARSH.

Heliobatis Marsh, 376; orthotype H. RADIANS Marsh (fossil). Both names undefined, hence becoming valid only when located by Woodward, 1889. A synonym of XIPHOTRYGON Cope, 1879 (X. ACUTIDENS).

1216. PETERS (1877). *Ueber Epigonichthys cultellus, eine neue Gattung und Art der Leptocardii.* Monatsb. Akad. Wiss. Berlin, 1876 (1877), 322-327.

WILHELM (CARL HARTWIG) PETERS.

Epigonichthys Peters, 322; orthotype E. CULTELLUS Peters.

1217. PETERS (1877). *Ueber eine merkwürdige von Dr. Buchholz entdeckte neue Gattung von Süsswasserfischen, Pantodon buchholzi,* etc. Monatsb. Akad. Wiss. Berlin, 1876 (1877), 195-200.

WILHELM (CARL HARTWIG) PETERS.

Pantodon Peters, 196; orthotype P. BUCHHOLZI Peters.

1218. PETERS (1877). *(Fossil Fishes.)* Preuss. Akad.

WILHELM (CARL HARTWIG) PETERS.

Hemitrichas Peters, 682; orthotype H. SCHISTICOLA Peters (fossil).

1219. PROBST (1877). *Beitrag zur Kenntniss der fossile Fische aus der Molasse von Baltringen.* II. Jahr. Verein. Vaterl. Naturk. Württemberg.

JOSEF PROBST.

Bates Probst, XXXIII, 88; logotype B. SPECTABILIS Probst (fossil). Not BATIS Bon.; an ally of MYLIOBATIS.

1220. SAUVAGE (1877). *Sur les Lepidotus palliatus et Sphærodus gigas.* Bull. Soc. Géol. France.

HENRI ÉMILE SAUVAGE.

Eurystethus Sauvage, 629; orthotype E. BRONGNIARTI Sauvage (fossil).
Desmichthys Sauvage, 634; orthotype D. DAUBREI Sauvage (fossil).

1221. TRAQUAIR (1877). *On the Agassizian Genera Amblypterus, Palæoniscus, Gyrolepis and Pygopterus.* Quart. Journ. Geol. Soc., 1877, XXXIII, 548-578.

RAMSAY HEATLEY TRAQUAIR.

Gonatodus Traquair, 555; logotype AMBLYPTERUS PUNCTATUS Ag. (fossil).
Cosmoptychius Traquair, 553; orthotype C. STRIATUS Traquair (fossil). A synonym of ELONICHTHYS Giebel.
Acentrophorus Traquair, 565; orthotype PALÆONISCUS VARIANS Kirby (fossil).
Rhadinichthys Traquair, 559; logotype PALÆONISCUS ORNATISSIMUS L. (fossil).

1222. TRAQUAIR (1877). *Monograph on the Ganoid Fishes of the British Carboniferous Formations.* I.

RAMSAY HEATLEY TRAQUAIR.

Microconodus Traquair, 33; orthotype M. MOLYNEUXI Traquair (fossil), name only. Quoted by Woodward, 1891. A synonym of GONATODUS.

1223. WINTHER (1877). *Om de danske fiske af slægten Gobius.* Nat. Tidskr. Kjöbenhavn, XI.

GEORG WINTHER (1844-1879).

Lebetus Winther, 49; orthotype GOBIUS SCORPIOIDES Collett.

1878.

1224. BARKAS (1878). *On the Microscopical Structure of Fossil Teeth from the Northumberland Coal Measures.* Monthly Review of Dental Surgery, VII.

WILLIAM JAMES BARKAS

Hybodopsis Barkas, 191; orthotype H. WARDI Barkas (fossil).

1225. BLEEKER (1878). *Sur deux espèces inédites de Cichloïdes de Madagascar.* Versl. Akad. Amsterdam (2), XII, 1878, 192-198.

PIETER BLEEKER.

Paracara Bleeker, 193; orthotype P. TYPUS Bleeker. A synonym of PARATILAPIA Blkr.

1226. BLEEKER (1878). *Quatrième mémoire sur la faune ichthyologique de la Nouvelle-Guinée.* Arch. Néerl. Sci. Nat. XIII, 1878, 35-66.

PIETER BLEEKER.

Bathygobius Bleeker, 54; logotype GOBIUS NEBULOPUNCTATUS Cuv. & Val. Replaces MAPO Smitt (G. SOPORATOR Cuv. & Val.).

Symphysanodon Bleeker, 61; orthotype S. TYPUS Blkr.

1227. BOSNIASKI (1878). *Studii sui pesci fossili del mioceno del Gabbro.* Atti. Soc. Tosc. Sci. Nat. Pisa.

S. DE BOSNIASKI.

Acanthonemopsis Bosniaski, I, 19; orthotype A. CAPELLINII Bosniaski (fossil).

1228. CASTELNAU (1878). *Notes on the Fishes of the Norman River.* Proc. Linn. Soc. New S. Wales, 1878, III, 41-51.

FRANCIS L. CASTELNAU

Pseudoambassis Castelnau, 43; logotype P. MACLEAYI Castelnau. Apparently a synonym of AMBASSIS Cuv. Preoccupied by PSEUDAMBASSIS Blkr.

Acanthoperca Castelnau, 45; orthotype A. GULLIVERI Castelnau. A synonym of AMBASSIS.

Gulliveria Castelnau, 45; logotype G. FUSCA Castelnau = APOGON APRION Rich. A synonym of GLOSSAMIA Gill.

1229. CASTELNAU (1878). *On Several New Australian (Chiefly) Fresh-water Fishes.* Proc. Linn. Soc. New S. Wales, 1878, 140-144.

FRANCIS L. CASTELNAU.

Aristeus Castelnau, 141; logotype A. FITZROYENSIS Castelnau. Name preoccupied; a synonym of MELANOTÆNIA Gill, 1862.

Eumeda Castelnau, 143; orthotype E. ELONGATA Castelnau. A synonym of NEOSILURUS Steind. (not NEOSILURUS Castelnau).

1230. CASTELNAU (1878). *Essay on the Ichthyology of Port Jackson.* Proc. Linn. Soc. New S. Wales, 1878, III, 347-402.

FRANCIS LAPORTE CASTELNAU.

Neoanthias Castelnau, 366; orthotype N. GUNTHERI Castelnau. A synonym of CAPRODON T. & S.

Agenor Castelnau, 371; orthotype AGENOR MODESTUS Castelnau. A synonym of SCORPIS Cuv. & Val.

Zeodrius Castelnau, 377; orthotype Z. VESTITUS Castelnau. A synonym of GONIISTIUS Gill (1862).

1231. COLLETT (1878). *Fiske fra Nordhavs-expeditionens sidste togt sommeren 1878.* Forh. Vidensk. Selsk. Christiania, 1878, XIV, 1-106.

ROBERT COLLETT

Rhodichthys Collett, 99; orothotype R. REGINA Collett.

Paraliparis Collett, 32; orthotype P. BATHYBII Collett.

1232. COPE (1878). *Synopsis of the Fishes of the Peruvian Amazon, Obtained by Prof. Orton During His Expeditions of 1873 and 1877.* Proc. Amer. Philos. Soc., 1878, XVII, 673-701.

EDWARD DRINKER COPE.

Epapterus Cope, XVII, 677; orthotype E. DISPILURUS Cope.

Chænothorax Cope, 679; orthotype C. BICARINATUS Cope.
Potamorhina Cope, 685; orthotype CURIMATUS PRISTIGASTER Steind.
Metynnis Cope, 693; orthotype M. LUNA Cope.
Gastropterus Cope, 700; orthotype G. ARCHÆUS Cope. A synonym of BASILICHTHYS Girard; name regarded as preoccupied by GASTROPTERON.

1233. COPE (1878). *Descriptions of Fishes from the Cretaceous and Tertiary Deposits West of the Mississippi River.* Bull. U. S. Geol. Surv., IV.
EDWARD DRINKER COPE.

Triænaspis Cope, 67; orthotype LEPTOTRACHELUS VIRGATULUS Cope (fossil).
Ichthyotringa Cope, IV, 69; orthotype I. TENUIROSTRIS Cope (fossil). A synonym of RHINELLUS Ag.

1234. CLARKE (1878). *On Two New Fishes (Argyropelecus intermedius and Aegæonichthys appelti).* Trans. Proc. New Zealand Instit., 1877 (1878), X, 243-246.
F. E. CLARKE.

Aegæonichthys Clarke, 245; orthotype A. APPELTI Clarke.

1235. DUBALEN (1878). *Note sur un poisson mal connu du bassin de l'Adour.* Bull. Soc. Borda. Dax.
——— DUBALEN.

Aturius Dubalen, 157; orthotype A. DUFOURI Dubalen = CYPRINUS LEUCISCUS L. A synonym of LEUCISCUS Cuv.

1236. GILL (1878). *On a Remarkable Generic Type (Elopomorphus jordani).* Ann. Mag. Nat. Hist., 1878, ser. 5, III, 112.
THEODORE NICHOLAS GILL.

Elopomorphus Gill, 112; orthotype E. JORDANI Gill.

1237. GILL (1878). *Note on the Antennariidæ.* Proc. U. S. Nat. Mus., I, 221.
THEODORE GILL.

Sympterichthys Gill, 222; orthotype LOPHIUS LÆVIS Lac.

1238. GILL (1878). *Note on the Ceratiidæ.* Proc. U. S. Nat. Mus., I.
THEODORE GILL.

Mancalias Gill, 227; orthotype CERATIAS URANOSCOPUS Murray.

1239. GILL (1878). *Myxocyprinus Gill.* Johnson's Cyclopædia.
THEODORE GILL

Myxocyprinus Gill, 1574; orthotype CARPIODES ASIATICUS Blkr.

1240. GÜNTHER (1878). *Preliminary Notices of Deep-Sea Fishes Collected During the Voyage of H. M. S. Challenger.* Ann. Mag. Nat. Hist., ser. 5, II, 17-28, 179-187, 248-251.
ALBERT GÜNTHER.

Bathydraco Günther, 18; orthotype B. ANTARCTICUS Gthr.
Melanonus Günther, 19; orthotype M. GRACILIS Gthr.
Bathynectes Günther, 20; logotype B. LATICEPS Gthr.
Typhlonus Günther, 21; orthotype T. NASUS Gthr.
Aphyonus Günther, 22; orthotype A. GELATINOSUS Gthr.
Acanthonus Günther, 23; orthotype A. ARMATUS Gthr.
Bathyophis Günther, 181; orthotype B. FEROX Gthr.

Bathysaurus Günther, 182; logotype B. FEROX Gthr.
Bathypterois Günther, 183; logotype B. LONGIFILIS Gthr.
Ipnops Günther, 186; orthotype I. MURRAYI Gthr.
Bathylagus Günther, 248; logotype B. ANTARCTICUS Gthr.
Bathytroctes Günther, 249; logotype B. MICROLEPIS Gthr.
Platytroctes Günther, 249; orthotype P. APUS Gthr.
Xenodermichthys Günther, 250; orthotype X. NODULOSUS Gthr.
Cyema Günther, 251; orthotype C. ATRUM Gthr.

1241. HILGENDORF (1878). *Ueber das Vorkommen einer Brama-Art und einer neuen Fischgattung Centropholis aus der Nachbarschaft des Genus Brama in den japanischen Meeren.* Sitzb. Ges. Naturf. Freunde Berlin, 1878, 1-2.
FRANZ MARTIN HILGENDORF.

Centropholis Hilgendorf, 1; orthotype C. PETERSI Hilgendorf.

1242. HILGENDORF (1878). *Ueber einigé neue japanische Fischgattungen.* Sitzb. Ges. Naturf. Freunde Berlin, 1878, 155-157.
FRANZ MARTIN HILGENDORF

Megaperca Hilgendorf, 155; orthotype M. ISCHINAGI Hilgendorf. A synonym of STEREOLEPIS Ayres.
Liobagrus Hilgendorf, 155; orthotype L. REINI Hilgendorf.

1243. JORDAN (1878). *Manual of the Vertebrates of the Northern United States, Including the District East of the Mississippi River and North of North Carolina and Tennessee, Exclusive of Marine Species.* 2d ed., V-407.
DAVID STARR JORDAN.

Quassilabia Jordan & Brayton, 406; orthotype LAGOCHILA LACERA Jordan & Brayton. Substitute for LAGOCHILA Jordan & Brayton, regarded as preoccupied by LAGOCHEILUS, a genus of mollusks.
Tauridea Jordan & Rice, 255; orthotype COTTUS RICEI Nelson.
Prosopium (Milner) Jordan, 261; orthotype COREGONUS QUADRILATERALIS Rich. The name PROSOPIUM was proposed by James W. Milner of the U. S. Fish Commission in a *Review of the American Whitefishes,* written in 1878, but left incomplete through the untimely death of the author.
Ulocentra Jordan, 223; orthotype, ARLINA ATRIPINNIS Jordan.
Minytrema Jordan, 318; orthotype CATOSTOMUS MELANOPS Raf.

1244. JORDAN & BRAYTON (1878). *Contributions to North American Ichthyology, III. B. On the Distribution of the Fishes of the Allegany Region of South Carolina, Georgia, and Tennessee, With Descriptions of New or Little Known Species.* Bull. U. S. Nat. Mus., 1878, XII, 1-95.
DAVID STARR JORDAN; ALEMBERT WINTHROP BRAYTON (1849-).

Hydrophlox Jordan, 18; orthotype HYBOPSIS RUBRICROCEUS Cope.
Erogala Jordan & Brayton, 20; orthotype PHOTOGENIS STIGMATURUS Jordan. A section under CYPRINELLA Grd.
Cristivomer Gill & Jordan, 69; orthotype SALMO NAMAYCUSH Walbaum.
Ioa Jordan & Brayton, 88; orthotype PŒCILICHTHYS VITREUS Cope.
Vaillantia Jordan, 89; orthotype BOLEOSOMA CAMURUM Forbes.

1245. JORDAN (1878). *Report on the Collection of Fishes Made by Dr. Elliott Coues in Dakota and Montana,* etc. Bull. U. S. Geol. Surv., IV.
DAVID STARR JORDAN.

Couesius Jordan, 785; orthotype NOCOMIS MILNERI Jordan = GOBIO PLUMBEUS Ag.

Zophendum Jordan, 786; orthotype HYBORHYNCHUS SIDERIUS Cope = AGOSIA CHRYSOGASTER Grd. A synonym of AGOSIA Grd.

Chriope Jordan, 787; orthotype HYBOPSIS BIFRENATUS Cope.

Symmetrurus Jordan, 788; orthotype POGONICHTHYS ARGYREIOSUS Grd., the young of P. INÆQUILOBUS Grd. A synonym of POGONICHTHYS.

1246. JORDAN (1878). *Notes on a Collection of Fishes from the Rio Grande at Brownsville, Texas.* Bull. U. S. Geol. Surv. Terr., 1878, IV, 397-406, 663-667.

DAVID STARR JORDAN.

(A few very young EMBIOTOCOID fishes from San Francisco were unfortunately mixed with this collection and wrongly described as new.)

Sema Jordan, 399; orthotype S. SIGNIFER Jordan; a larval form of CYMATOGASTER AGGREGATUS Gibbons. A synonym of CYMATOGASTER Gibbons.

Dacentrus Jordan, 667; orthotype D. LUCENS Jordan; the young of HYSTEROCARPUS TRASKI Gibbons. A synonym of HYSTEROCARPUS Gibbons.

1247. JORDAN (1878). *A Catalogue of Fishes of the Fresh Waters of North America.* Bull. U. S. Geol. Surv. Terr., 1878, IV., 407-442.

DAVID STARR JORDAN.

Chasmistes Jordan, 417; orthotype CHASMISTES LIORUS Jordan, a species wrongly supposed to be the same as CATOSTOMUS FECUNDUS Cope & Yarrow.

1248. JORDAN & GILBERT (1878). *Notes on the Fishes of Beaufort Harbor, North Carolina.* Proc. U. S. Nat. Mus., I.

DAVID STARR JORDAN; CHARLES HENRY GILBERT (1859-).

Chriolax Jordan & Gilbert, 374; orthotype TRIGLA EVOLANS L. A synonym of PRIONOTUS Lac.

1249. JORDAN (1878). *(Notes on Fishes of Ohio.)* Second Report Ohio Fish Commission; John H. Klippart, Commissioner.

DAVID STARR JORDAN.

Mascalongus Jordan, 92; orthotype ESOX MASQUINONGY Mitchill = ESOX NOBILIOR Thompson.

1250. KONINCK (1878). *Faune du calcaire carbonifère de la Belgique; première partie.* Ann. Mus. Roy. Hist. Nat. Belgique, 1878, II, 1-152.

LAURENT DE KONINCK.

Benedenius (Traquair) Koninck, 14; orthotype B. DENEENSIS Traquair (fossil). Name preoccupied, replaced by BENEDENICHTHYS Traquair, 1890.

Serratodus Koninck, 53; orthotype S. ELEGANS Koninck (fossil). A synonym of CTENOPTYCHIUS Ag.

Stichæacanthus Koninck, 70; orthotype S. COEMANSI Koninck (fossil).

1251. MACLEAY (1878). *Description of Some New Fishes from Port Jackson and King George's Sound.* Proc. Linn. Soc. New S. Wales, 1878, III, 33-38.

WILLIAM MACLEAY.

Isosillago Macleay, 34; orthotype I. MACULATA Macleay. A synonym of SILLAGINODES Gill.

1252. NEWBERRY (1878). *Descriptions of New Paleozoic Fishes.* Ann. N. Y. Acad. Sci., 1878, I, 188-192.

JOHN STRONG NEWBERRY.

Diplurus Newberry, 127; orthotype D. LONGICAUDATUS Newberry (fossil).

Diplognathus Newberry, 188; orthotype D. MIRABILIS Newberry (fossil).
Archæobatis Newberry, 190; orthotype A. GIGAS Newberry (fossil).

1253. NEWTON (1878). *The Chimæroid Fishes of the British Cretaceous Strata.* Mem. Geol. Surv. United Kingdom, 1878, Monograph IV, 1-50.
EDWIN TULLEY NEWTON (1840-).

Elasmognathus Newton, 43; orthotype E. WILLETTII Newton (fossil). Name preoccupied in HEMIPTERA, replaced by ELASMODECTES Newton, 1888.

1254. SAUVAGE (1878). *Note sur quelques Cyprinidæ et Cobitinæ d'espèces inédites, provenant des eaux douces de la Chine.* Bull. Soc. Philom. Paris, VII, sér. 2, 86-90.
HENRI ÉMILE SAUVAGE.

Agenigobio Sauvage, 87; orthotype A. HALSONETI Sauvage.
Crossostoma Sauvage, 89; orthotype C. DAVIDI Sauvage.
Paramisgurnus Sauvage, 90; orthotype P. DABRYANUS Sauvage.

1255. SAUVAGE (1878). *Note sur quelques poissons d'espèces nouvelles provenant des eaux douces de l'Indo-Chine.* Bull. Soc. Philom. Paris, 1878, VII, sér. 2, 233-242.
HENRI ÉMILE SAUVAGE.

Cosmochilus Sauvage, 240; orthotype C. HARMANDI Sauvage.

1256. SAUVAGE (1878). *Description de poissons nouvelles ou imparfaitement connus,* etc. Nouv. Arch. Mus. Nat. Hist. Paris, II.
HENRI ÉMILE SAUVAGE.

Pseudosebastes Sauvage, 115; orthotype SEBASTES BOUGAINVILLEI Cuv. & Val.
Eusebastes Sauvage, 115; orthotype SEBASTES SEPTENTRIONALIS Gaimard. A synonym of SEBASTES Cuv.
Elaphocottus Sauvage, 142; logotype COTTUS PISTILLIGER Pallas. A synonym of GYMNOCANTHUS Sw.

1257. STEINDACHNER (1878). *Ichthyologische Beiträge.* VII. Sitzb. Akad. Wiss. Wien, 1878 (1879), LXXVIII, 1. Abth., 377-400.
FRANZ STEINDACHNER.

Neomyxus Steindachner, 384; orthotype MYXUS SCLATERI Steind.
Leptobrama Steindachner, 388; orthotype L. MUELLERI Steind.
Cratinus Steindachner, 395; orthotype C. AGASSIZI Steind.

1258. STREETS (1878). *Contributions to the Natural History of the Hawaiian and Fanning Islands and Lower California.* Bull. U. S. Nat. Mus., 1878, VII, 43-102.
THOMAS HALE STREETS (1847-).

Sebastapistes (Gill) Streets, 62; orthotype SEBASTES STRONGIA Cuv. & Val.

1259. VAILLANT & BOCOURT (1878). *Études sur les poissons.* Mission Scientifique au Mexique, etc., IV.
LÉON LOUIS VAILLANT; FIRMIN BOCOURT.

Itaiara Vaillant & Bocourt, 67; orthotype SERRANUS ITAIARA Lichtenstein = PERCA GUTTATA L. A synonym of PROMICROPS Poey.

1260. WINKLER (1878). *Mémoire sur quelques restes de poissons du système heersien.* Arch. Mus. Teyler Haarlem, IV.
TIBERIUS CORNELIUS WINKLER.

Cycloides Winkler, 3; orthotype C. INCISUS Winkler (fossil). A fragment perhaps not of a fish.

Trigonodus Winkler, 14; orthotype SQUATINA PRIMA Noetling (fossil). A synonym of THAUMAS Münster.

1261. WINKLER (1878). *Deuxième Mémoire sur les dents de poissons fossiles du terrain bruxellien.* Arch. Mus. Teyler Haarlem.

TIBERIUS CORNELIUS WINKLER.

Trichiurides Winkler, 31; orthotype T. SAGITTIDENS Winkler (fossil).

1879.

1262. BASSANI (1879). *Vorläufige Mittheilungen über die (fossil) Fischfaune der Insel Lesina.* Verh. Geol. Reichsanst. Wien, 1879, 162-170.

FRANCESCO BASSANI.

Aphanepygus Bassani, 162; Orthotype A. ELEGANS Bassani (fossil). A synonym of PETALOPTERYX Pictet.

Prochanos Bassani, 165; orthotype P. RECTIFRONS Bassani (fossil).

Hemielopopsis Bassani, 166; orthotype H. SUESSI Bassani (fossil). An extinct homologue of HISTIALOSA.

1263. BEAN (1879). *Description of Some Genera and Species of Alaskan Fishes.* Proc. U. S. Nat. Mus., II.

TARLETON HOFFMAN BEAN (1846-1918.)

Melletes Bean, 354; orthotype M. PAPILIO Bean.

Dallia Bean, 358; orthotype D. PECTORALIS Bean.

1264. BLEEKER (1879). *Mémoire sur les poissons à pharyngiens labyrinthiformes de l'Inde archipélagique.* Verh. Akad. Amsterdam, XIX, 1879, 1-56.

PIETER BLEEKER.

Pseudosphromenus Bleeker, 2; orthotype OSPHROMENUS OPERCULARIS Blkr.

Parosphromenus Bleeker, 20; orthotype P. DEISSNERI Blkr.

1265. BLEEKER (1879). *Révision des espèces insulindiennes de la famille des Callionymoïdes.* Versl. Akad. Amsterdam (2), XIV, 1879, 79-107.

PIETER BLEEKER.

Eleutherochir Bleeker 103; orthotype E. OPERCULARIOIDES Blkr.

1266. BLEEKER (1879). *Sur quelques espèces inédites ou peu connues de poissons de Chine appartenant au Muséum de Hambourg.* Verh. Akad. Amsterdam XVIII, 1879, 1-17.

PIETER BLEEKER.

Hemiglyphidodon Bleeker, 8; orthotype H. PLAGIOMETOPON Blkr.

1267. BLEEKER (1879). *Énumerâtion des espèces de poissons actuellement connues du Japon et description de trois espèces inédites.* Verh. Akad. Amsterdam, XVIII, 1879, 1-33.

PIETER BLEEKER.

Lepidorhynchus Bleeker, 21; orthotype L. VILLOSUS Blkr.

1268. CAMPBELL (1879). *On a New Fish (Discus aureus).* Trans. Proc. New Zeal. Instit., XI, 297-298.

W. D. CAMPBELL.

Discus Campbell, 298; orthotype D. AUREUS Campbell.

1269. CASTELNAU (1879). *On a New Ganoid Fish from Queensland.* Proc. Linn. Soc. New S. Wales, 1878, III, 164-165.

FRANCIS L. CASTELNAU.

Ompax Castelnau, 165; orthotype O. SPATULOIDES Castelnau. This species is based on a drawing, probably a rough representation of EPICERATODUS Teller. Macleay doubts the actual existence of the genus or species.

1270. CASTELNAU (1879). *On Several New Australian Fresh-water Fishes.* Proc. Linn. Soc., III.

FRANCIS L. CASTELNAU.

Aristeus Castelnau, 141; orthotype A. FITZROYENSIS Castelnau. Preoccupied in CRUSTACEA; replaced by RHOMBATRACTUS Gill. A synonym of MELANOTÆNIA Gill.

1271. COLLETT (1879). *On a New Fish of the Genus Lycodes from the Pacific.* Proc. Zool. Soc. London.

ROBERT COLLETT.

Lycodopsis Collett, 386; orthotype LYCODES PACIFICUS Collett (issued August 1, 1879). Same as LEURYNNIS Lockington (March 25, 1880).

1272. COPE (1879). *A Sting Ray (Xiphotrygon acutidens) from the Green River Shales of Wyoming.* Amer. Natural., 1879, XIII, 333.

EDWARD DRINKER COPE.

Xiphotrygon Cope, 333; orthotype X. ACUTIDENS Cope (fossil).

1273. DAVIS (1879). *Notes on Pleurodus . . . and . . . Three Spines of Cestracionts from the Lower Coal Measures.* Quart. Journ. Geol. Soc., XXXV.

JAMES WILLIAM DAVIS.

Phricacanthus Davis, 186; orthotype P. BISERIALIS Davis (fossil). Probably a synonym of ORACANTHUS Ag.

1274. DAVIS (1879). *On Ostracacanthus . . . a Fossil Fish from the Coal Measures Southeast of Halifax, Yorkshire.* Reprint Brit. Assn. Adv. Sci., 1879.

JAMES WILLIAM DAVIS.

Ostracacanthus Davis, 343; orthotype O. DILATATUS Davis.

1275. GILL (1879). *(Rhombatractus.)* Amer. Naturl., 1879.

THEODORE GILL.

Rhombatractus Gill, 709; orthotype ARISTEUS FITZROYENSIS Castelnau. Substitute for ARISTEUS Castelnau, preoccupied. A synonym of MELANOTÆNIA Gill, 1862.

1276. GOODE & BEAN (1879). *A Preliminary Catalogue of the Fishes of the St. Johns River and the East Coast of Florida . . .* Proc. U. S. Nat. Mus., II.

GEORGE BROWN GOODE; TARLETON HOFFMAN BEAN.

Jordanella Goode & Bean, 117; orthotype J. FLORIDÆ Goode & Bean.

1277. GOODE & BEAN (1879). *Description of a New Genus and Species of Fish, Lopholatilus chamæleonticeps, from the South Coast of New England.* Proc. U. S. Nat. Mus., II, 205-209.

George Brown Goode; Tarleton Hoffman Bean.

Lopholatilus Goode & Bean, 205; orthotype L. chamæleonticeps Goode & Bean.

1278. JORDAN (1879). *Description of New Species of North American Fishes.* Proc. U. S. Nat. Mus., II, 235-241.

David Starr Jordan

Xiphister Jordan, 241; orthotype Xiphidion mucosum Grd. A substitute for Xiphidion Grd., regarded as preoccupied by Xiphidium, a genus of grasshopper.

1279. JORDAN (1879). *Note on a Collection of Fishes Obtained in the Streams of Guanajuato and in Chapala Lake, Mexico, by Prof. A. Dugès.* Proc. U. S. Nat. Mus., II, 299-301.

David Starr Jordan.

Goodea Jordan, 299; orthotype G. atripinnis Jordan.

1280. GORJANOVIC-KRAMBERGER (1879). *Beiträge zur Kenntniss der fossilen Fische der Karpathen.* Palæontographica, XXVI.

Dragutin Gorjanovic-Kramberger.

Megalolepis Kramberger, 61; orthotype M. cashcænsis Kramberger (fossil).

1281. KESSLER (1879). *Beiträge zur Ichthyologie von Central-Asien.* Bull. Acad. Sci. St. Petersb., 1879, XXV, 282-310.

Karl Theodorovich Kessler.

Aspiorhynchus Kessler, 289; orthotype, A. przewalskii Kessler.

1282. LOCKINGTON (1879). *Description of New Genera and Species of Fishes from the Coast of California.* Proc. U. S. Nat. Mus., II, 326-332.

William Neale Lockington (1842-1902).

Leurynnis Lockington, 326; orthotype Leurynnis paucidens Lockington (male of Lycodopsis pacificus Collett) (issued March 25, 1880). A synonym of Lycodopsis Collett (Aug. 1, 1879).

Odontopyxis Lockington, 326; orthotype O. trispinosus Lockington.

1283. LOCKINGTON (1879). *On a New Genus of Scombridæ.* Proc. Acad. Nat. Sci. Phila., 1879, 133-136.

William Neale Lockington.

Chriomitra Lockington, 133; orthotype C. concolor Lockington. A synonym of Scomberomorus Lac.

1284. SAUVAGE (1879). *Notice sur la faune ichthyologique de l'Ogôoué.* Bull. Soc. Philom. Paris, sér. 7, III, 90-103.

Henri Émile Sauvage.

Micracanthus Sauvage, 95; orthotype M. marchii Sauvage. Name preoccupied by Microcanthus (Micracanthus) Sw. (1839). Being apparently a valid genus, the name has been replaced by Oshimia Jordan, 1919, in honor of Masamitsu Oshima.

Doumea Sauvage, 96; orthotype D. TYPICA Sauvage.
Atopochilus Sauvage, 96; orthotype A. SAVORGNANI Sauvage.

1285. SAUVAGE (1879). *Description de gobioides nouveaux ou peu connus de la collection du Museum d'Histoire Naturelle.* Bull. Sci. Philom. Paris.

HENRI ÉMILE SAUVAGE.

Giuris Sauvage, 15; logotype G. VANICOLENSIS Sauvage (no generic diagnosis), near HYPSELEOTRIS Gill.

1286. SAUVAGE (1879). *(Uranoplosus.)* Bull. Soc. Yonne, XXXIII.

HENRI ÉMILE SAUVAGE.

Uranoplosus Sauvage, 47; orthotype U. COTTEAUI Sauvage (fossil).
Cosmodus Sauvage, 48; orthotype C. GRANDIS Sauvage (specific name preoccupied) = CŒLODUS MAJOR Woodward. May replace CŒLODUS Heckel (1856), regarded as preoccupied by CŒLODON Lund (1839).

1287. STEINDACHNER (1879). *Zur Fischfauna des Magdalenen-Stromes.* Denkschr. Akad. Wiss. Wien, XXXIX, 19-78.

FRANZ STEINDACHNER.

Luciocharax Steindachner, 67; orthotype L. insculptus Steind. A synonym of CTENOLUCIUS Gill (1861), but in the latter case no specific name was given.

1288. STEINDACHNER (1879). *Ueber einige neue und seltene Fisch-Arten aus den k.-k. zoologischen Museum zu Wien, Stuttgart, und Warschau.* Denkschr. Akad. Wiss. Wien, XLI, 1-52.

FRANZ STEINDACHNER.

Parequula Steindachner, 8; orthotype P. BICORNIS Steind.

1289. TRAUTSCHOLD (1879). *Ueber Fischzähne des Moskauer Jura.* Bull. Soc. Imp. Nat. Moskau, XIV.

HERMANN VON TRAUTSCHOLD.

Cymatodus Trautschold, 53; C. PLICATULUS Trautschold (fossil). Name preoccupied; probably a synonym of MESOLOPHODUS Woodw.
Cranodus Trautschold, 54; orthotype C. ZONODUS Trautschold (fossil).
Chiastodus Trautschold, 58; orthotype C. OBVALLATUS Trautschold (fossil).
Arpagodus Trautschold, 59; orthotype A. RECTANGULUS Trautschold (fossil). A synonym of CAMPODUS Koninck.

1290. WAAGEN (1879). *Paleontology of India.*

W. WAAGEN (1841-1900).

Helodopsis Waagen, I, 14; logotype H. ELONGATA Waagen (fossil).
Thaumatacanthus Waagen, I, 78; orthotype T. BLANFORDI Waagen (fossil).

1880.

1291. BLEEKER (1880). *Musei Hamburgensis species piscium novæ minusque cognitas descripsit et depingi curavit.* Abh. Naturw. Ver. Hamburg, 1880, VII, 25-30.

PIETER BLEEKER.

Hemiglyphidodon Bleeker, 8; orthotype H. PLAGIOMETOPON Blkr.

1292. COLLETT (1880). *Den Norske Nordhavs Expedition, 1876-1878. Zoologi, Fiske.* Christiania.
ROBERT COLLETT.

Rhodichthys Collett, 154; orthotype R. REGINA Collett.

1293. COPE (1880). *Second Contribution to the History of the Vertebrata of the Permian Formation of Texas.* Proc. Amer. Philos. Soc., XIX, 38-58.
EDWARD DRINKER COPE.

Ectosteorhachis Cope, 52; orthotype E. NITIDUS Cope (fossil). A synonym of PARABATRACHUS Owen.

1294. FONTANNES (1880). *Nouvelle contribution à la faune et à la flore des marnes pliocènes à Brissopsis d'Eurre (Drôme). Type nouveau de la famille des Clupeoides.* Ann. Soc. Agric. Hist. Nat. Lyon, V, 423-425.
CHARLES FRANCISQUE FONTANNES (1839-1886).

Clupeops (Sauvage), Fontannes, 209; orthotype C. INSIGNIS Sauvage (fossil). Miocene from le Bassin de Crest at Eurre, Drôme (publication needs verification).

1295. GARMAN (1880). *Synopsis and Descriptions of the American Rhinobatidæ.* Proc. U. S. Nat. Mus.
SAMUEL GARMAN.

Platyrhinoidis Garman, 516; orthotype PLATYRHINA TRISERIATA J. & G.

Discobatus Garman, 523; orthotype RAJA SINISIS Lac.; substitute for PLATYRHINA M. & H., regarded as preoccupied by PLATYRHINUS; but ANALITHIS Gistel (1848) is a still earlier substitute name.

1296-1297. GIGLIOLI (1880). *Elenco dei mammiferi, degli uccelli e dei rettili ittiofagi . . . et catalogo . . . dei pesci italiani.* Esposizione Internazionale della Pesca, Berlin.

Pomatomichthys Giglioli, 20; orthotype P. CONSTANCIÆ Giglioli = POMATOMUS TELESCOPIUM Risso. A synonym of EPIGONUS Raf.

Thynnichthys Giglioli, 25; orthotype THYNNUS THUNNINA Cuv. & Val. = SCOMBER ALLETERATUS Raf. Name preoccupied; a synonym of EUTHYNNUS Lütken (1883).

Pelamichthys Giglioli, 25; orthotype SCOMBER UNICOLOR Geoffroy St. Hilaire. A synonym of ORCYNOPSIS Gill, 1862.

1298. GOODE (1880). *Fishes from the Deep Water on the South Coast of New England Obtained by the United States Fish Commission in the Summer of 1880.* Proc. U. S. Nat. Mus., 1880, III, 467-486.
GEORGE BROWN GOODE.

Amitra Goode, 478; orthotype A. LIPARINA Goode. Name regarded as preoccupied by AMITRUS; replaced by MONOMITRA Goode, 1883.

1299. GOODE (1880). *Descriptions of Seven New Species of Fishes from Deep Soundings on the Southern New England Coast, With Diagnosis of Two Undescribed Genera of Flounders and a Genus Related to Merlucius.* Proc. U. S. Nat. Mus. 1880, III, 337-350.

Monolene Goode, 338; orthotype M. SESSILICAUDA Goode.
Thyris Goode, 344; orthotype T. PELLUCIDUS Goode; larva of MONOLENE Goode. Name preoccupied, replaced by DELOTHYRIS Goode, 1883.
Hypsicometes Goode, 347; orthotype H. GOBIOIDES Goode.

1300. GÜNTHER (1880). *Report on the Shore Fishes.* (In *Zoölogy of the Voyage of H. M. S. Challenger.* I, 1-82.

ALBERT GÜNTHER.

Bathyanthias Günther, 6; orthotype B. ROSEUS Gthr.
Zanclorhynchus Günther, 15; orthotype Z. SPINIFER Gthr.
Murænolepis Günther, 17; orthotype M. MARMORATUS Gthr.
Lepidopsetta Günther, 18; orthotype L. MACULATA Gthr. Name preoccupied among flounders; replaced by MANCOPSETTA Gill.
Thysanopsetta Günther, 22; orthotype T. NARESI Gthr.
Lophonectes Günther, 28; orthotype L. GALLUS Gthr.
Læops Günther, 28; orthotype L. PARVICEPS Gthr.
Propoma Günther, 39; orthotype P. ROSEUM Gthr.
Lioscorpius Günther, 40; orthotype L. LONGICEPS Gthr.
Acanthaphritis Günther, 43; orthotype A. GRANDISQUAMIS Gthr.
Tetrabrachium Günther, 45; orthotype T. OCELLATUM Gthr.
Anticitharus Günther, 47; orthotype A. POLYSPILUS Gthr.
Pœcilopsetta Günther, 48; orthotype P. COLORATA Gthr.
Nematops Günther, 57; orthotype N. MICROSTOMA Gthr.

1301. HAY (1880). *On a Collection of Fishes from Eastern Mississippi.* Proc. U. S. Nat. Mus., 1880, III, 488-515.

OLIVER PERRY HAY (1846-).

Opsopœodus Hay, 507; orthotype O. EMILIÆ Hay.

1302. HECTOR (1880). *Notice of a New Fish (Hypolycodes haastii).* Trans. Proc. New Zealand Instit., 1880 (1881), 13, 194-195.

JAMES HECTOR.

Hypolycodes Hector, 194; orthotype H. HAASTII Hector.

1303. HILGENDORF (1880). *Ueber eine neue berkenswerthe Fischgattung, Leucopsarion, von Japan.* Monatsb. Akad. Wiss. Berlin.

FRANZ MARTIN HILGENDORF

Leucopsarion Hilgendorf, 340; orthotype L. PETERSI Hilgendorf.

1304. JORDAN & GILBERT (1880). *Notes on a Collection of Fishes from San Diego, California.* Proc. U. S. Nat. Mus., III, 1880, 23-34.

DAVID STARR JORDAN; CHARLES HENRY GILBERT.

Roncador Jordan & Gilbert, 28; orthotype CORVINA STEARNSI Steind.
Leuresthes Jordan & Gilbert, 29; orthotype ATHERINA TENUIS Ayres.

1305. JORDAN & GILBERT (1880). *Description of a New Flounder (Xystreurys liolepis) from Santa Catalina, California.* Proc. U. S. Nat. Mus., 1880, III, 34-36.

DAVID STARR JORDAN; CHARLES HENRY GILBERT.

Xystreurys Jordan & Gilbert, 34; orthotype X. LIOLEPIS J. & G.

1306. JORDAN & GILBERT (1880). *Description of a New Flounder (Pleuronichthys verticalis) from the Coast of California, with Notes on Other Species.* Proc. U. S. Nat. Mus., 1880, III, 49-51.

DAVID STARR JORDAN; CHARLES HENRY GILBERT.

Atheresthes Jordan & Gilbert, 51; orthotype PLATYSOMATICHTHYS STOMIAS J. & G.

1307. JORDAN & GILBERT (1880). *On the Generic Relations of Platyrhina exasperata.* Proc. U. S. Nat. Mus., LIII.

DAVID STARR JORDAN; CHARLES HENRY GILBERT.

Zapteryx Jordan & Gilbert, 53; orthotype PLATYRHINA EXASPERATA J. & G.

1308. JORDAN & GILBERT (1880). *Descriptions of Two New Species of Fishes (Ascelichthys rhodorus and Scytalina cerdale) from Neah Bay, Washington Territory.* Proc. U. S. Nat. Mus., 1880, III, 264-268.

DAVID STARR JORDAN; CHARLES HENRY GILBERT.

Ascelichthys Jordan & Gilbert, 264; orthotype A. RHODORUS J. & G.

Scytalina Jordan & Gilbert, 266; orthotype S. CERDALE J. & G. Name regarded as preoccupied by SCYTALINUS, replaced by SCYTALISCUS J. & G.

1309. JORDAN & GILBERT (1880). *Description of a New Species of Deep-water Fish (Icichthys lockingtoni) from the Coast of California.* Proc. U. S. Nat. Mus., 1880, III, 305-308.

DAVID STARR JORDAN; CHARLES HENRY GILBERT.

Icichthys Jordan & Gilbert, 305; orthotype I. LOCKINGTONI J. & G.

1310. KLUNZINGER (1880). *Die von müllersche Sammlung australischer Fische in Stuttgart.* Sitzb. Akad. Wiss. Wien, LXXX, 325-430.

CARL BENJAMIN KLUNZINGER.

Platychærops Klunzinger, 399; orthotype P. MUELLERI Klunzinger.

1311. KŒNEN (1880). *Ueber Coccosteus-Arten aus dem Devon von Birken.* Zeitschr. Deutsch. Geol. Ges., 1880, XXXII, 673-675.

ADOLF VON KŒNEN (1837-1915).

Brachydirus Kœnen, 675; orthotype COCCOSTEUS BIRKENSIS Kœnen (fossil).

1312. LOCKINGTON (1880). *Description of a New Genus and Some New Species of California Fishes (Icosteus ænigmaticus and Osmerus attenuatus).* Proc. U. S. Nat. Mus., 1880, III, 63-68.

WILLIAM NEALE LOCKINGTON.

Icosteus Lockington, 63; orthotype I. ÆNIGMATICUS Lockington.

1313. LOCKINGTON (1880). *Description of a New Chiroid Fish (Myriolepis zonifer) from Monterey Bay, California.* Proc. U. S. Nat. Mus., 1880, III, 248-251.

WILLIAM NEALE LOCKINGTON.

Myriolepis Lockington, 248; orthotype, M. ZONIFER Lockington. Based on a young specimen; name preoccupied, replaced by ERILEPIS Gill, which supplants EBISUS Jordan & Snyder, 1901, the adult fish.

1314. PETERS (1880). *Ueber die von der chinesischen Regierung zu der internationalen Fischerei-Austellung gesandte Fischsammlung aus Ningpo.* Monatsb. Akad. Wiss. Berlin, 1880, 921-927.

WILHELM (CARL HARTWIG) PETERS.

Distœchodon Peters, 924; orthotype D. TUMIROSTRIS Peters.

Mylopharyngodon Peters, 925; orthotype LEUCISCUS ÆTHIOPS.

1315. PETERS (1880). *Ueber eine Sammlung von Fischen, welche Dr. Gerlach in Hongkong gesandt hat.* Monatsb. Akad. Wiss. Berlin, 1880, 1029-1037.
WILHELM (CARL HARTWIG) PETERS.

Semilabeo Peters, 1032; orthotype S. NOTABILIS Peters.

Cranoglanis Peters, 1030; orthotype C. SINENSIS Peters.

1316. ROCHEBRUNE (1880). *Description de quelques espèces nouvelles de poisson propres à Sénégambie.* Bull. Soc. Philom. Paris, 1880, sér. 7, IV, 159-169.
ALPHONSE TRÉMEAU DE ROCHEBRUNE (1834-).

Sparactodon Rochebrune, 162; orthotype S. NALNAL Rochebrune. A synonym of POMATOMUS Lac.

1317. ST. JOHN & WORTHEN (1880). *Descriptions of Fossil Fishes.* Geological Survey of Illinois, VII.
ORESTES H. ST. JOHN; A. H. WORTHEN.

Vaticinodus St. John & Worthen, 80; logotype V. TENERRIMUS St. John & Worthen (fossil). A synonym of SANDALODUS Newberry & Worthen.

Stenopterodus St. John & Worthen, 100; orthotype S. ELONGATUS St. John & Worthen (fossil). A synonym of DELTODUS.

Chitonodus St. John & Worthen, 109; logotype COCHLIODUS LATUS Leidy (fossil).

Deltodopsis St. John & Worthen, 158; logotype D. AFFINIS St. John & Worthen (fossil).

Orthopleurodus St. John & Worthen, 190; logotype O. CONVEXUS St. John & Worthen (fossil). A synonym of SANDALODUS.

1318. SAUVAGE (1880). *Description des gobioides nouveaux ou peu connus de la collection du Muséum d'Histoire Naturelle.* Bull. Soc. Philom. Paris, 1880, sér. 7, IV, 40-58.
HENRI ÉMILE SAUVAGE.

Cayennia Sauvage, 57; orthotype C. GUICHENOTI Sauvage.

1319. SAUVAGE (1880). *Description de quelques poissons d'espèces nouvelles,* etc. Bull. Sci. Philom. Paris, IV.
HENRI ÉMILE SAUVAGE.

Pseudopristipoma Sauvage, 220; orthotype PRISTIPOMA LEUCURUM Cuv. & Val.

1320. SAUVAGE (1880). *Notice sur quelques poissons de l'île Campbell et de l'Indo-Chine.* Bull. Soc. Philom. Paris, 1880, sér. 7, IV, 228-233.
HENRI ÉMILE SAUVAGE.

Paratylognathus Sauvage, 227; orthotype P. DAVIDI Sauvage.

Probarbus Sauvage, 232; orthotype P. JULLIENI Sauvage.

1321. SAUVAGE (1880). *Notice sur les poissons tertiaires de Céreste (Basses Alpes).* Bull. Soc. Géol. France (3), VIII, 1880.
HENRI ÉMILE SAUVAGE.

Enoplophthalmus Sauvage, 449; orthotype E. SCHLUMBERGERI Sauvage (fossil).

Properca Sauvage, 452; logotype PERCA ANGUSTA Ag. (fossil).

1322. SAUVAGE (1880). *Synopsis des poissons et des reptiles des terrains jurassiques de Boulogne-sur-Mer.* Bull. Soc. Géol. Paris, 1880, sér. 3, VIII, 524-547.
HENRI ÉMILE SAUVAGE.

Athrodon Sauvage, 530; orthotype A. DOUVILLII Sauvage (fossil).

1323. SAUVAGE (1880). *Nouvelles recherches sur les poissons fossiles decouverts par M. Alby à Licata en Sicilie.* Ann. Soc. Géol. XI.

HENRI ÉMILE SAUVAGE.

Podopteryx Sauvage, 17; orthotype P. ALBYI Sauvage (fossil).

Parequula Sauvage, 25; orthotype P. ALBYI Sauvage (fossil); name preoccupied, Steindachner, 1879.

Paraleuciscus Sauvage, 38; orthotype P. ECNOMI Sauvage (fossil).

1324. STEINDACHNER (1880). *Ichthyologische Beiträge.* VIII. Sitzb. Akad. Wiss. Wien, LXXX, 119-191.

FRANZ STEINDACHNER.

Typhlogobius Steindachner, 141; orthotype T. CALIFORNIENSIS Steind; replaces OTHONOPS Rosa Smith.

1325. STEINDACHNER (1880). *Ichthyologische Beiträge.* IX. Sitzb. Akad. Wiss. Wien, LXXXII (July 15, 1880), 238-266.

FRANZ STEINDACHNER.

Ptychochromis Steindachner, 248; orthotype TILAPIA OLIGACANTHUS Blkr.

Ancharius Steindachner, 251; orthotype A. FUSCUS Steind.

Hypoptychus Steindachner, 257; orthotype H. DYBOWSKII Steind.

Neozoarces Steindachner, 263; orthotype N. PULCHER Steind.

1326. STOCK (1880). *Note on a Spine . . . from the Coal Measures of Northumberland.* Ann. Mag. Nat. Hist., V.

THOMAS STOCK.

Lophacanthus Stock, V, 217; orthotype L. TAYLORI Stock (fossil). A synonym of ORACANTHUS Ag..

1327. THOMINOT (1880). *Note sur un poisson de genre nouveau appartenant à la famille des scombérodés, voisin des sérioles.* Bull. Soc. Philom. Paris, 1880, sér. 7, IV, 173-174.

ALEXANDRE THOMINOT.

Lepidomegas Thominot, 173; orthotype L. MUELLERI Thominot. A synonym of SERIOLA Cuv.; based on a very old example with the free spines absorbed.

1328. TRAUTSCHOLD (1880). *Ueber Tomodus Agass.* Bull. Soc. Imp. Moscou. LV, 139-140.

HERMANN VON TRAUTSCHOLD.

Oxytomodus Trautschold, 140; orthotype TOMODUS ARGUTUS Trautschold (fossil).

OMISSIONS

1758

1. LINNÆUS (1758). *Systema Naturæ.* Ed. X.

CAROLUS LINNÆUS.

Myxine Linnæus, 650; orthotype M. GLUTINOSA L. Overlooked in Part I, p. 16, being placed by Linnæus among the worms.

1777

23. KLEIN (1777). *Schauplatz,* IV, etc.

JAKOB THEODOR KLEIN.

Cynocephalus Klein; type SQUALUS GLAUCUS L. The name CYNOCEPHALUS was applied to a genus of bats by Boddaert in 1768.

1803

62. GIORNA (1803). *Mémoire*, etc.

MICHEL ESPRIT GIORNA.

Trachyrincus Giorna. This is the original spelling, and the apparent date is 1803.

1815

83. RAFINESQUE (1815). *Descrizione*, etc.

CONSTANTINE SAMUEL RAFINESQUE.

Nemochirus Rafinesque; a synonym of TRACHIPTERUS Gouan, according to Hubbs.

1839

251. SWAINSON (1839). *Natural History*, etc.

WILLIAM SWAINSON.

Lepidosoma ("Risso") Swainson; haplotype "LEPIDOSOMA TRACHYRHYNCHUS Risso." Evidently a slip for LEPIDOLEPRUS Risso.

1843

295. AGASSIZ (1843). *Recherches*, etc., III.

LOUIS AGASSIZ.

Physonemus Agassiz, 176; haplotype P. SUBTERES Ag. (fossil). Name only; with locality, lower Subcarboniferous of Armagh, described later by M'Coy, 1848, with a different type, probably not congeneric with it.

Glyphis Agassiz, III, 243; orthotype G. HASTALIS Ag. (fossil).

1844

318A. MÜLLER (1844). *Ueber den Bau und die Grenzen der Ganoiden und das natürliche System der Fische.* Abh. Akad. Wiss. Berlin, 1844, 117-216, reprinted elsewhere.

JOHANNES MÜLLER.

This epoch-making memoir is the most important of Müller's contributions to Ichthyology. In it he continues his bad habit of inserting new genera in brief footnotes irrelevant to the text.

Tribranchus (Peters) Müller; orthotype T. ANGUILLARIS Peters = ANGUILLA AUSTRALIS Rich. A synonym of ANGUILLA Shaw.

324. RICHARDSON (1844). *Voyage Erebus*, etc.

JOHN RICHARDSON.

Rhynchana Richardson, 44; orthotype R. GREYI Rich. = CYPRINUS GONORHYNCHUS Gmelin. A synonym of GONORHYNCHUS (Gronow) Scopoli.

1846

351. CUVIER & VALENCIENNES (1846). *Histoire naturelle*, etc. XVIII, XIX.

ACHILLE VALENCIENNES.

Panchax Cuvier & Valenciennes, XVIII, 380; tautotype ESOX PANCHAX Ham. = PANCHAX BUCHANANI Cuv. & Val., a synonym of APLOCHEILUS M'Clelland.

Vandellia Cuvier & Valenciennes, XVIII, 386; haplotype V. CIRRHOSA Cuv. & Val.

1847

375. MEYER (1847). *Vorläufige Uebersicht*, etc.

HERMANN VON MEYER.

Cenchrodus Meyer, 574; logotype C. GŒPPERTI Meyer (fossil).

Hemilopas Meyer, 575; orthotype H. MENTZELI Meyer (fossil). (This and the preceding indeterminable fragments of a jaw, probably of COLOLOBUS Ag.)

1848

390. M'COY (1848). 411 M'Coy with CENTRODUS is the same paper as 390, the proper date being 1848.

391. M'COY (1848). *Ichthyodorulites,* etc.
FREDERICK M'COY.

Platacanthus M'Coy, 120; as originally written, later emended to PLATYACANTHUS.
Dipriacanthus M'Coy, 121; logotype D. STOKESII M'Coy (fossil).

391. M'COY (1848). *Scotch Old Red Sandstone,* etc.
FREDERICK M'COY.

Chirodus M'Coy, 130; orthotype C. PES-RANÆ M'Coy. This name was originally and correctly spelled CHIRODUS.

1849

427A. GEINITZ (1849). *Das Quadcrsandsteingebirge.*
HANS BRUNO GEINITZ.

Aulolepis Geinitz, 86; orthotype A. REUSSI Geinitz. "CYCLOIDEN-SCHUPPE" Geinitz, 1839 = CYCLOLEPIS Geinitz, 1868. AULOLEPIS apparently replaces CYCLOLEPIS Geinitz, 1868.

1851

439. BLEEKER (1851). *Borneo,* II, etc.
PIETER BLEEKER.

Clupeoides Bleeker, 275; orthotype C. BORNEËNSIS Blkr. is a valid genus distinct from CORICA, according to Weber.

1852

464. GERVAIS (1852). *Zoologie et Paléontologie Françaises.* I.
FRANÇOIS LOUIS PAUL GERVAIS.

Onchosaurus Gervais, 268; orthotype O. RADICALIS Gervais (fossil). Wrongly identified as the tooth of a Mososaur. Replaces ISCHYRHIZA Leidy.

1853

482A. M'COY (1853). *On the Supposed Fish Remains Figured on Plate 4 of the Silurian System.* Quart. Journ. Geol. Soc., IX.
FREDERICK M'COY.

Leptocheles M'Coy, 14; orthotype L. MURCHISONI M'Coy (fossil). A synonym of ONCHUS.

483. OWEN (1853). *Notice of a Batrachoid in British Coal Shale.* Quart. Journ. Geol. Soc., IX, 67-70.
RICHARD OWEN.

Parabatrachus Owen, 67, etc.

1854

503. GIRARD (1854). *Enumeration,* etc.
CHARLES GIRARD.

Heterostichus is misspelled on page 258.

512A. MORRIS (1854). *Catalogue of British Fossils.*
JOHN MORRIS.

Gyrosteus (Agassiz) Morris, 328; orthotype G. MIRABILIS Ag. First validation of GYROSTEUS and perhaps of some other nominal genera of Agassiz. See No. 614.

1855

521. AYRES (1855). *Description,* etc.
WILLIAM O. AYRES.

Cebidichthys Ayres. This is the original and correct spelling, not CEBEDICHTHYS.

530. BLEEKER (1855). *Sumatra,* etc.
PIETER BLEEKER.

Clupeichthys Bleeker, 275; orthotype C. GONIOGNATHUS Blkr. This is a valid genus, according to Weber, distinct from CORICA.

535A. GERVAIS (1855). *Description d'un poisson fossile du terrain crétacé de la Drome,* etc. Ann. Sci. Nat., III.
FRANÇOIS PAUL LOUIS GERVAIS.

Histialosa Gervais, 322; orthotype H. THIOLLERI Gervais (fossil).

543. PETERS (1855). *Uebersicht,* etc.
WILHELM PETERS.

Opsaridium Peters, 269; orthotype O. ZAMBEZENSE Peters. Description given as from manuscript by Günther, 1868.

1856

561. HECKEL (1856). *Pycnodonten,* etc.
JOHANN JAKOB HECKEL.

Stemmatodus Heckel, 202; orthotype PYCNODUS RHOMBUS Ag. This generic name is not preoccupied. STEMMATODUS St. John & Worthen (1875) is preoccupied and replaced by STEMMATIAS Hay, 1899.

572. PANDER (1856). *Monographie.* etc.
CHRISTIAN HEINRICH PANDER.

Besides the nominal genera of Russian Silurian fossils listed by Woodward, the following additional names are given by Marshall. These we are not able to verify.

DREPANODUS, 20.
ACODUS, 21.
MACHAIRODUS, 22.
PALTODUS, 24.
ACONTIODUS, 28.
PRIONIODUS, 29.
BELODUS, 30.
CTENOGNATHUS, 32.
GNATHODUS, 33.
PRIONOGNATHUS, 34
STROSIPHERUS, 73.
MONOPLEURODUS, 78.

1857

582A. GIEBEL (1857). *Dichelodus, ein neuer Fisch im Mansfelder Kupferschiefer.* Zeitschr. Gesammt. Naturw., IX, 121-126.
CHRISTOPH (GOTTFRIED ANDREAS) GIEBEL.

Dichelodus Giebel, 121; orthotype D. ACUTUS Giebel (fossil).

583. GIRARD (1857). *Contributions,* etc.
CHARLES GIRARD.

Chiropsis Girard, 201; haplotype, as indicated in the *Pacific R. R. Survey,* is CHIRUS PICTUS Grd. = LABRUS SUPERCILIOSUS Pallas.

1859

664A. PAGE (1859). *(Fossil Fishes; Old Red Sandstone of Scotland.)* Rept. Brit. Assn. Adv. Sci., 1858 (1859).
D. PAGE.

Ictinocephalus Page, 104; orthotype I. GRANULATUS Page (fossil). Name only, identical with ISCHNACANTHUS Powrie, 1864.

1863

Blepharichthys Gill, misprinted in text on page 302.

1866

834. KNER & STEINDACHNER. *Neue Gattungen,* etc. Abh. Königl. Bayerischen Akad. Wiss. München, X.
RUDOLPH KNER; FRANZ STEINDACHNER.

The correct date of this paper is 1866, the second part issued in 1868, the whole with title page in 1870, according to Hussakof.

1874

1128 and 1129 LÜTKEN (1874). LEPORELLUS Lütken, 129 should come under No. 1129, and GLANIDIUM Lütken, 31, and BAGROPSIS Lütken, 32, should come under 1128, a slip made in printing.

INDEX TO PART III.

(Genera of doubtful standing are marked *d*; synonyms, *s*.)

Abramidopsis, *s*, 328
Abramocephalus, *s*, 355
Acanthaluteres, 340
Acanthaphritis, 403
Acantharchus, 332
Acanthaspis, 379
Acanthistius, 315
Acanthobrama, 287, 335
Acanthocepola, 372
Acanthochætodon, 383
Acanthochromis, 324
Acanthocobitis, 308
Acanthocybium, 314
Acanthodopsis, 352
Acanthodoras, 311
Acanthogobius, 290
Acantholatris, 313
Acantholebius, *s*, 305
Acantholepis, *s*, 379
Acanthomullus, *d*, 309
Acanthonemopsis, 393
Acanthonotos, *s*, 359
Acanthonus, 394
Acanthoperca, *s*, 393
Acanthorhodeus, 355
Acanthostracion, 340
Acaropsis, 381
Acentrachme, *s*, 315
Acentrogobius, 373
Acentrophorus, 392
Acheilognathus, 288
Achirophichthys, *s*, 335
Achiropsis, 387
Achœrodus, 325
Acodus, *s*, 409
Acondylacanthus, 380
Acontiodus, *s*, 409
Acra, 321
Acrodobatis, *s*, 391
Acrodontosaurus, *s*, 355
Acrogrammatolepis, *s*, 350
Acronurus, *s*, 307
Actenolepis, *s*, 364
Actinogobius, 373
Adinia, 290
Aegæonichthys, 394
Æglefinus, *s*, 391
Aganodus, *s*, 347
Agassizodus, *s*, 380
Ageleodus, 347
Agenigobio, 397
Agenor, *s*, 393
Aglyptosternon, 312
Agnus, *s*, 296
Agonomalus, 341
Agonopsis, 305
Agrammatolepis, *s*, 350
Agrammus, 296
Aida, *s*, 378
Ailiichthys, 361
Aipichthys, 293
Akysis, 293
Alausella, *s*, 303
Albulichthys, 288
Alburnoides, *s*, 308
Aledon, *s*, 301
Alepidogobius, 373
Alexandrinus, *s*, 308
Algoa, 301
Alopiopsis, 338
Alosina, 300
Alticus, *d*, 353
Alvarius, 290
Alvordius, 290
Amacanthus, 381
Amblyapistus, 384
Amblychæturichthys, 374
Amblycirrhitus, 313
Amblydoras, 311
Amblyeleotris, 372
Amblygobius, 374
Amblypharyngodon, 288
Amblypomacentrus, 387
Amblyraja, *d*, 391
Amblyrhynchichthys, 288
Amblyscion, 324
Amblytoxotes, 383
Amiopsis, *s*, 327
Amitra, *d*, 402
Ammocrypta, 390
Ammopleurops, *s*, 319
Ammotretis, 319
Amphicentrum, *s*, 344
Amphilius, 332
Amphiplaga, 388
Amyzon, 364
Anacyrtus, 333
Anædopogon, 360
Anapterus, 371
Anarmostus, *s*, 328
Ancharius, 406
Anchybopsis, 356
Ancylopsetta, *s*, 331
Andamia, 289
Andreiopleura, 336
Anema, *s*, 296
Anematichthys, 288
Anisarchus, 331
Anisochirus, 319
Anisotremus, 302
Ankistrodus, *d*, 358
Anogmius, 360, 388
Anomalops, 352
Anomiolepis, *d*, 304
Anoplagonus, 305
Anoplarchus, 305
Anoplogaster, 291
Anticitharus, 403
Antliodus, *s*, 342
Anyperodon, 291
Aphanepygus, *s*, 398
Aphyocharax, 351
Aphyocypris, 351
Aphyonus, 394
Aploactisoma, *s*, 363
Aplocheilichthys, *s*, 321
Apocope, 363
Apocryptichthys, 385
Apocryptodon, 374

Apostata, *s*, 294
Aprionodon, 303, 306
Apseudobranchus, *s*, 313
Apsopelix, 360
Apua, 294
Archæobatis, 397
Archæogadus, *s*, 339
Archæoides, *s*, 292
Archamia, 323
Archichthys, *s*, 358
Archoplites, 305
Archoscion, 313
Arctozenus, 330
Argyrotænia, *s*, 302
Ariopsis, *s*, 303
Aristeus, *s*, 393, 399
Arlina, *s*, 290
Arnoglossus, 310
Arpagodus, *s*, 401
Arrhamphus, 340
Ascelichthys, 404
Asineops, 356
Asperulus, *s*, 303
Aspidichthys, 371
Aspidobagrus, 312
Aspidodus, *s*, 342
Aspidolepis, *d*, 349
Aspidophorus, *s*, 359
Aspidopleurus, *s*, 342
Aspiorhynchus, 400
Asproperca, *s*, 295
Astatichthys, *s*, 371
Astemomycterus, *d*, 296
Astephus, 368
Asternopteryx, 307
Asternotremia, *s*, 390
Asterosteus, 379
Asthenurus, *s*, 339
Astrodoras, 311
Astroscopus, 295
Atelurus, 357
Athæna, 301
Atheresthes, 404
Atherinella, 381
Atherinops, 381
Atherinosoma, 363
Athrodon, 405
Atopochilus, 401
Atopomycterus, 336
Atractoperca, *s*, 305
Atractoscion, *d*, 313
Attakeopsis, *s*, 366
Aturius, *s*, 394
Atypus, *s*, 296
Auchenionchus, 296
Auchenipterichthys, 311
Auchenoglanis, 334
Auchenopterus, *d*, 307
Aulacosteus, *s*, 295
Aulichthys, 315
Auliscops, *s*, 342
Aulolepis, 408
Aulorhynchus, 305
Auluxacanthus, *s*, 347
Awaous, *s*, 299
Ayresia, 323
Bagrichthys, 293, 312
Bagropsis, 376, 410
Bairdiella, 302
Balantiocheilos, 287
Banjos, 382
Barbichthys, 287
Barbodes, 288
Barbodon, *s*, 364
Barynotus, 351
Bascanius, *d*, 353
Batacanthus, 381
Batasio, 294
Bates, *d*, 392
Bathyanthias, 403
Bathycheilodus, *s*, 380
Bathydraco, 394
Bathygobius, 393
Bathylagus, 395
Bathymaster, 368
Bathynectes, 394
Bathyophis, 394
Bathypterois, 395
Bathysaurus, 395
Bathystoma Scudder, 328
Bathystoma Fitzinger, *s*, 369
Bathythrissa, *s*, 389
Bathytroctes, 395
Belobranchus, 372
Belodus, 409
Belonesox, 298
Belonichthys, 353
Bembrops, 387
Bendilisis, *s*, 288
Benedenius, *s*, 396
Beridia, *s*, 388
Blakea, *s*, 387
Blanchardia, *s*, 378
Bleeckeria, *s*, 368
Bleekeria, 318
Blennicottus, 305
Blennioclinus, 295
Blennodesmus, 361
Blepharichthys, 302, 410
Bliccopsis, *s*, 328
Bogota, 294, 383
Bola, *s*, 351
Boleichthys, 290
Boleops, *s*, 326
Boopsidea, 301
Boreocottus, *s*, 290
Boreogadus, 318
Boreogaleus, 306
Boreogobius, 326
Bostockia, 368
Bowenia, 369
Brachaluteres, 340
Brachyacanthus, *s*, 295
Brachyalestes, 333
Brachyamblyopus, 374
Brachyconger, *s*, 335
Brachydeuterus, 313
Brachydirus, 404
Brachyeleotris, 373
Brachygadus, *s*, 316, 325
Brachygenys, 353
Brachygobius, 373
Brachygramma, *s*, 337
Brachyichthys, 321
Brachyistius, 316
Brachymesistius, *s*, 325
Brachymullus, 383
Brachymystax, 340
Brachyopsis, 304, 305
Brachyplatystoma, 312
Brachypleura, 319
Brachypomacentrus, 387
Brachyprosopon, *s*, 310
Brachyrhamphichthys, *s*, 357
Brachyrhinus, *s*, 315
Brachyrhynchus, *s*, 360
Brachyspondylus, 339
Brachysynodontis, 311
Brama, *s*, 312
Bramocharax, 389
Bramopsis, *s*, 300

Branchiosteus, 318
Breviperca, 378
Brevoortia, 303
Brisbania, 388
Brochis, 363
Brosmophycis, 305
Bryactinus, 379
Bryconæthiops, 369
Bryconops, 292
Buglossus, *s*, 319
Bungia, 308
Bunocottus, 352
Butis, 372
Byssacanthus, 309
Bythiacanthus, 381
Cachius, *s*, 351
Cænotropus, 333
Cæsiosoma, *d*, 383
Calamoichthys, 343
Calamostoma, *s*, 328
Calleleotris, *s*, 326
Calliclinus, 296
Callogobius, *s*, 373
Callomystax, 332
Calloptilum, *s*, 366
Callyodontichthys, 300
Calopodus, 380
Camarina, 293
Campylomormyrus, 372
Campylopleuron, *s*, 346
Carangops, *s*, 316
Carangus, *s*, 291
Careproctus, 308
Carpionichthys, *s*, 322
Catastoma, *s*, 312
Cathetostoma, *s*, 305
Caularchus, 317
Caulolatilus, 316
Caulopus, 314
Cayennia, 405
Cebidichthys, 409
Cenchrodus, 407
Centroberyx, 315
Centriscops, 315
Centroblennius, 302
Centrogobius, 373
Centropholis, 395
Centrophorus, *s*, 292
Centropogon, 296
Centropterus, 301
Centropus, 298
Centropyge, *s*, 298
Centroscymnus, 329
Cephalogobius, 373
Cephalopsis, *s*, 369
Cephalopterus, *s*, 359
Cephaloscyllium, 306
Cephenoplosus, *s*, 377
Ceratacanthus, 303
Ceratocottus, 290
Ceratoscopelus, 333
Cestracion, *s*, 303, 306
Cetengraulis, 351
Chænobryttus, 332
Chænogaleus, 306
Chænomugil, *d*, 324
Chænopsetta, 303, 331
Chænopsis, 323
Chænothorax, 394
Chætodontoplus, 383
Chætodontops, 383
Chalcinopsis, *s*, 327
Champsocephalus, 306
Champsodon, 345
Channalabes, 369
Chanodichthys, 288
Characidium, 343
Characodon, 340
Characodus Ag., *d*, 320
Characodus Owen, *s*, 347
Chasmistes, 396
Cheiliopsis, 328
Cheilolabrus, *s*, 387
Cheimarrichthys, 375
Cheirothrix, 342
Chelidonichthys, 370
Chelmonops, 383
Chiasmodon, 327
Chiastodus, 401
Chiloglanis, 353
Chirocentrodon, 351
Chirodactylus, 313
Chirodus, 408
Chiropsis, *s*, 410
Chitonodus, 405
Chloroscombrus, 291
Chœrojulis, *s*, 314
Chœroplotosus, *s*, 334, 338
Cholodus, 380
Chondroplites, 314
Chonophorus, 299
Chorististium, 313
Chriolax, *s*, 396
Chriomitra, *s*, 400
Chriope, 396
Chromis, *s*, 318
Chrysophekadion, *s*, 287
Cirrhinichthys, 321
Cirrhiptera, *s*, 383
Cirrhitopsis, *s*, 313
Cirrimens, 313
Citharichthys, 310
Citharœdus, 297
Citharus, *s*, 310
Clara, *s*, 314
Clastes, *d*, 368
Cleithrolepis 330
Clidoderma 310
Clinocottus 305
Clupeichthys 409
Clupeoides, 408
Clupeonella, 391
Clupeops, 402
Cnidoglanis, 332
Coccia, *s*, 333
Cochliodon, 332
Codonolepis, *s*, 350
Coinolepis, *s*, 350
Coliscus, *s*, 363
Collichthys, 296
Conchiopsis, *s*, 368
Conchopoma, 352
Congrogadus, 318
Conorhynchus, *s*, 303
Conosaurops, *d*, 352
Copelandia, *s*, 390
Copiodoglanis, *s*, 332
Copodus, 320
Coradion, 297
Coridodax, 318
Coryphogobius, *s*, 326
Coryphopterus, *s*, 325
Cosmochilus, 397
Cosmodus, 401
Cosmoptychius, *s*, 392
Cossyphodes, *s*, 293
Cottapistus, 384
Cottogaster, 328
Cottoperca, 381
Cottunculus, 379
Cotylopus, 332
Couesius, 395
Cranodus, 401

Cranoglanis, 405
Crapatalus, 308
Cratinus, 397
Crayracion, *s*, 340
Creagrutus, 333
Creatochanes, 333
Credemnolepis, *s*, 349
Cremnobates, *d*, 308
Crenicara, 381
Crenuchus, 326
Crepidogaster, *s*, 307
Crinodus, 313
Cristivomer, 395
Crommiolepis, *d*, 350
Crommyodus, 356
Crossocheilichthys, 321
Crossognathus, 292
Crossostoma, 397
Crotalopis, 297
Cryptocentrus, 374
Cryptopterus, *d*, 297
Cryptosmilia, *s*, 344
Cryptotomus, 361
Crystallogobius, 326
Ctenognathus, *s*, 409
Ctenolates, 361
Ctenolucius, 302
Ctenopetalus, 320
Ctenopharyngodon, 343
Ctenotrypauchen, *s*, 348
Culius, *s*, 372
Curimatopsis, 387
Curtodus, 347
Cyclocheilichthys, 288
Cyclogobius, *s*, 299
Cycloides, *d*, 398
Cyclolepis, *d*, 349
Cyclonarce, *s*, 307
Cycloptychius, 344
Cyclospondylus, *s*, 347
Cyclotomodon, 385
Cyema, 395
Cymatodus Newberry & Worthen, *d*, 359
Cymatodus Trautschold, *d*, 401
Cymolutes, 318
Cynocephalus, 306, 407
Cynolebias, 387
Cynoperca, 390
Cynoscion, 304
Cyprinopsis, *s*, 339
Cyrtacanthus, *d*, 371
Cyttopsis, 314
Dacentrus, *s*, 396
Dactylagnus, 318
Dactylanthias, 367
Dactylodus, 342
Dactylopagrus, 313
Dactylopogon, 339
Dactylopus, 290
Dactylosargus, 313
Dactyloscopus, 290
Dactylosparus, *s*, 314
Dallia, 398
Dampieria, 378
Dapedoglossus, *s*, 388
Daptinus, *s*, 364
Dasyscopelus, 333
Datnioides, *s*, 294
Decaptus, *s*, 309
Decodon, 318
Dekaya, *s*, 323
Deltentosteus, 325
Deltodopsis, 405
Deltodus, 320
Deltoptychius, 320
Dendroptychius, 344
Dermatoptychus, *s*, 339
Dermatostethus, *d*, 317
Desmichthys, 392
Desmiodus, 380
Deuteropterus, 304
Devario, *s* 288
Dianema, 363
Diaphanichthys, *s*, 334
Diaphyodus, *s*, 328
Diastichus, 356
Dibranchus, 379
Dicentrarchus, 296
Dichelodus, 409
Dicrossus, 381
Dicrotus, 297
Didymaspis, 346
Dimalacocentrus, *s*, 325
Dinemus, *s*, 298
Dinichthys, 371
Dinolestes, 366
Diphrissa, *s*, 379
Diplocheilichthys, 287
Diplocrepis, 307
Diplognathus, 397
Diplolepis, *s*, 328
Diplomystax, *s*, 332
Diplomystes, 311
Diplomystus, *d*, 388
Diplophos, 369
Diplophysa, 376
Diplotomodon, 352
Diplurus, 396
Dipriacanthus, 408
Dipristis Gervais, *s*, 354
Dipristis Marsh, *d*, 359
Diproctacanthus, 309
Diptychus, 343
Diretmus, 326
Dirrhizodon, 358
Disceus, 389
Dischistodus, 324
Discobatus, *s*, 402
Discognathichthys, 287
Discus, 399
Distœchodon, 404
Ditaxiodus, *s*, 342
Dittodus, *s*, 346
Doliichthys, 376
Doliodon, *s*, 291
Doratonotus, 318
Dormitator, 302, 316
Doumea, 401
Drepanacanthus, *s*, 342
Drepanephorus, 365
Drepanodus, *s*, 409
Drepanopsetta, *s*, 303
Dypterolepis, *s*, 349
Dysichthys, 374
Echiichthys, 301, 309
Echiopsis, *s*, 297
Ectosteorhachis, *s*, 402
Edelia, *s*, 368
Egertonia, 329
Elaphocottus, *s*, 397
Elasmognathus, *s*, 397
Elassoma, 390
Elattonistius, *s*, 390
Electrophorus, 330
Eleginops, 306
Eleotriodes, *d*, 373
Eleotrioides, *s*, 372
Eleutheractis, *s*. 361
Eleutherochir, 398
Eleutheronema, 310
Ellerya, *s*, 367

Ellipsodus, 389
Elopichthys, 288
Elopomorphus, 394
Embalorhynchus, 359
Empo, 364
Enchelurus, 328
Enchelyopus, *s*, 310
Enchelyurus, 353
Engyprosopon, 319
Enneacanthus, 332
Enneacentrus, 337
Enoplophthalmus, 405
Entelurus, *s*, 357
Enteromius, 344
Entomacrodus, 289
Entosphenus, 317
Entoxychirus, *s*, 317
Epapterus, 393
Epicopus, *s*, 296
Epigonichthys, 391
Epiplatys, 314
Episema, *s*, 390
Erichæta, *s*, 391
Ericosma, 390
Ericymba, 336
Erimyzon, 386
Erinemus, 386
Erisichthe, *s*, 364
Erismatopterus, 356
Eritrema, *s*, 384
Erogala, 395
Erotelis, 299
Erpetoichthys, *s*, 339
Estheria, 319
Estrella, *s*, 290
Eteira, *s*, 297
Eucalia, 386
Eucentrarchus, 332
Eucephalaspis, *s*, 358
Euchalarodus, *s*, 331
Euchoristopus, 326
Euclyptosternum, *s*, 332
Euctenogobius, 289
Eucyclogobius, 316
Eugaleus, *s*, 330
Eugomphodus, *d*, 303, 331
Eukeraspis, *s*, 358
Eulamia, *s*, 306
"Eulepidotæ," *s*, 347
Eulepidotus, 349
Euleptorhamphus, 289
Eumeda, *s*, 393
Eumesogrammus, 331
Eumicrotremus, 317, 331
Eumylodus, *s*, 370
Euphysocara, 325
Eupleurogrammus, 314
Eupomacentrus, 387
Eupomotis, 389
Euprotomicrus, 331
Eurycormus, *s*, 329
Eurypegasus, *s*, 322
Eurypoma, *s*, 341
Eurysomus, *s*, 344 (misprinted Euryosomus on page 344)
Eurystethus, 392
Euschistodus, *s*, 315
Eusebastes, *s*, 397
Eusphyra, 306
Eustira, 351
Eustomatodus, *s*, 316
Euthacanthus, *s*, 334
Euthyonotus, 300
Eutropiichthys, 310
Eutychelithus, *s*, 386
Evepigymnus, *d*, 316
Evoplites, 315
Evorthodus, 289
Evoxymetopon, 325
Exomegas, 348
Exostoma, 294
Fissodus, 380
Fitzroyia, 340
Fundulichthys, 288
Furcaria, 299
Galeoides, 297
Gampsacanthus, 381
Ganacrodus, *d*, 347
Ganolodus, *s*, 347
Ganorhynchus, 371
Gasterostea, *s*, 377
Gastræa, *s*, 377
Gastrodus, *s*, 347
Gastromyzon, 375
Gastropterus, *s*, 394
Geisacanthus, *s*, 381
Genyagnus, 305
Genyatremus, 316
Genyonemus, 304
Genytremus, *s*, 310
Gerreomorpha, 387
Gibbonsia, 323
Giffonus, 312
Gillia, *s*, 334
Gillichthys, 323
Girardinichthys, 294
Girellichthys, *s*, 366
Giuris, *s*, 401
Glanidium, 376, 410
Glaucus, *s*, 321
Glossamia, 323
Glossanodon, 341
Glossichthys, *s*, 303
Glossogobius, 290
Glymmatacanthus, 381
Glyphidodontops, *s*, 387
Glyphis, 407
Glyphodes, *s*, 332
Glyptauchen, 296
Glyptolæmus, *s*, 287
Glyptothorax, *s*, 294
Gnathagnus, 305
Gnathendalia, 301
Gnathocentrum, *s*, 341
Gnathodentex, 367
Gnathodus, 409
Gnatholepis, 373
Gnathonemus, 317
Gnathophis, *d*, 297
Gnathopogon, *s*, 288
Gnathypops, 316
Gobiichthys, *s*, 361
Gobileptes, *d*, 374
Gobiobarbus, *s*, 354
Gobioclinus, 295
Gobiomorphus, 326
Gobionellus, 291
Gobionichthys, 321
Gobiopsis, 299
Gobiopterus, 373
Gobiopus, *d*, 375
Gobiosoma, *s*, 364
Gogrius, *s*, 344
Gompholepis, 362
Gonatodus, 392
Goniistius, 314
Goniobatis, *s*, 361
Goniolepis, *s*, 350
Gonionarce, *s*, 307
Gonioperca, *s*, 315
233 Linsert

Gonoproktopterus, 288
Gonostomyxus, 355
Goodea, 400
Gramma, 353
Grammateus, 376
Grammatopleurus, *s*, 305
Grammatorcynus, 314
Grammicolepis, 371
Grammiconotus, 312
Graodus, *s*, 351
Graphiurus, 341
Gronias, 329
Gryphodobatis, 391
Guavina, 372
Gulliveria, *s*, 393
Gunnellops, 372
Guntheria, 309
Gymnallabes, 345
Gymneipignathus, *d*, 316
Gymneleotris, 372
Gymnobutis, 372
Gymnocæsio, 382
Gymnocranius, 358
Gymnocrotaphus, 291
Gymnocypris, 351
Gymnodus, 361
Gymnogobius, *s*, 326
Gymnopropoma, *s*, 325
Gymnosarda, 314
Gymnoscopelus, 369
Gymnotes, 330
Gyropleurodus, 317
Gyrosteus, 409
Habrolepis, *s*, 369
Hæmulopsis, *s*, 355
Halælurus, 306
Halargyreus, 318
Halatractus, *s*, 317
Halias, *s*, 293
Halidesmus, 361
Halieutichthys, 324
Haligenes, *s*, 292
Haliichthys, 291
Haliperca, 315
Halophryne, 324
Haloporphyrus, *d*, 318
Halosaurus, 327
Hannovera, 360
Haploidonotus, *s*, 304
Hara, *s*, 294
Harpacodus, *s*, 320, 380
Harpactes, *s*, 385
Harpactira, 385
Harttia, 387
Hectoria, *s*, 368
Hedronchus, *d*, 385
Heliobatis, *d*, 391
Heliodus, *s*, 379
Heliolepis, 350
Helioperca, *d*, 390
Helminthodes, 331
Helminthostoma, *s*, 357
Helodopsis, 401
Helogenes, 326
Helotosoma, *s*, 327, 383
Hemiancistrus, 311
Hemianthias, 377
Hemiarius, 311
Hemibagrus, 312
Hemibarbus, 288
Hemibrycon, 333
Hemicetopsis, 311
Hemichætodon, 384
Hemiconiatus, *d*, 357
Hemiculter, 288
Hemicyclaspis, 358
Hemicyclolepis, *d*, 350
Hemicyclus, 350
Hemielopopsis, 398
Hemiglyphidodon, 398, 402
Hemigobius, 373
Hemigonolepis, *s*, 350
Hemigymnus, *s*, 308
Hemilampronites, *d*, 350
Hemilopas, *d*, 408
Hemiloricaria, 311
Hemilutjanus, 382
Hemiodontichthys, 311
Hemioplites, *s*, 344
Hemiplatystoma, *s*, 312
Hemirhamphodon, 340
Hemirhombus, *s*, 310
Hemirhynchus, 346
Hemisaurida, 346
Hemisciæna, *s*, 321
Hemisorubim, 312
Hemisynodontis, 311
Hemitaurichthys, 383
Hemitautoga, 309
Hemithyrsites, 371
Hemitremia, 356
Hemitrichas, 392
Hemixiphophorus, *s*, 288
Heptadecacanthus, *s*, 387
Herpetoichthys, *s*, 338
Hetereleotris, 373
Heterobagrus, 329
Heterochœrops, 343
Heteroclinus, 363
Heteroconger, 348
Heterolepidotus, *d*, 365
Heterolepis, *d*, 336
Heteroleuciscus, 376
Heteroprosopon, *s*, 310
Heteroscarus, 363
Heterostichus, *s*, 300, 408
Heterostrophus, 329
Heterothrissa, 351
Heterothrissops, *s*, 381
Heterythrinus, *s*, 332
Hexapsephus, 385
Hippoglossina, 387
Histialosa, 409
Histiophryne, 324
Holanthias, 351
Holaspis, *s*, 370
Holcolepis, 339, 352
Hollardia, 308
Holophagus, *s*, 301
Holopterura, 361
Holorhinus, 317
Holotaxis, 356
Holotrachys, 369
Holoxenus, *s*, 385
Homacanthus, *s*, 295
Homalogrystes, *s*, 387
Homalorhynchus, *s*, 367
Homœolepis, *s*, 300
Hoplarchus, *s*, 297
Hoplobrotula, 325
Hoplocoryphis, 314
Hoplonchus, 385
Hoplonotus, *s*, 341
Hoplopagrus, 304
Hoplunnis, 297
Hucho, 340
Hybocladodus, 380
Hybodopsis, 392
Hydrocyonoides, *s*, 301
Hydrolagus, 317
Hydrophlox, 395
Hygrogonus, *s*, 318
Hymenolomus, *s*, 357

Hypamia, 370
Hyperistius, *s*, 332
Hyperoglyphe, 291
Hyperopisus, 314
Hyperoplus, 318
Hypleurochilus, 302
Hypocritichthys, 316
Hypogymnogobius, 373
Hypohomus, 355
Hypolycodes, 403
Hypomesus, 313
Hypophthalmichthys, 288
Hypoplectrodes, 315
Hypoplectrus, 315
Hypoplites, 315
Hypopomus, 330
Hypoprionodon, 306
Hypopterus, 304
Hypoptopoma, 351
Hypoptychus, 406
Hyporhamphus, 289
Hyporthodus, *s*, 304
Hypsagonus, 305
Hypselobagrus, *d*, 312
Hypselobarbus, 288
Hypseleotris, 326
Hypsicometes, *d*, 403
Hypsifario, 317
Hypsigenys, *s*, 308
Hypsiptera, *s*, 297
Hypsoblennius, 302
Hypsocormus, 300
Hypsopsetta, 317, 331
Hypsurus, 300
Hypsypops, 305
Hypterus, *s*, 386
Hyptius, *s*, 330
Hystricodon, 333
Iaus, *s*, 288
Ichthyborus, 333
Ichthyodectes, 356
Ichthyomyzon, 291
Ichthyorhamphos, *s*, 301
Ichthyotringa, *s*, 394
Icichthys, 404
Icosteus, 404
Ictinocephalus, *s*, 334, 410
Idiacanthus, 386
Iguanodectes, 363
Imostoma, 390
Incisidens, 316
Inermia, 299
Iniistius, 314
Ioa, 395
Ipnops, 395
Irex, *s*, 321
Isichthys, 317
Isistius, 331
Isocephalus, *s*, 321
Isocolum, *s*, 349
Isognatha, *s*, 303
Isogomphodon, 306
Isopisthus, 313
Isoplagiodon, 306
Isosillago, 396
Isotænia, 379
Isuropsis, 306
Itaiara, *s*, 397
Jenynsia, *s*, 341
Jerdonia, 356
Jordanella, 399
Joturus, 299
Kallostrakon, *s*, 358
Kathetostoma, 296
Kneria, 343
Kuhlia, 304
Kymatolepis, 349
Kymatopetalolepis, *s*, 349
Labidesthes, 356
Labracinus, 383
Labracoglossa, 342
Labrastrum, *s*, 296
Labroperca, *s*, 315
Labyrinthodontosaurus, *s*, 366
Lacepedia, 367
Ladislavia, 354
Læmolyta, 363
Læmonema, 318
Læops, 403
Lagochila, *d*, 391
Laides, 293
Lais, *s*, 293
Lambdodus, 380
Lamiopsis, *s*, 306
Lanioperca, *s*, 365
Larimodon, *s*, 383
Latebrus, *s*, 298
Latridopsis, 314
Latrunculodes, 379
Latrunculus, 307
Laubuca, 288
Lebetus, 392
Lebistes, 301
Lecracanthus, 381
Lefroyia, *s*, 375
Leiarius, 312
Leiodus, 380
Leiolepis, *s*, 369
Leiosynodontis, *s*, 311
Leius, *s*, 338
Lembus, *s*, 291
Lentipes, 307
Lepidamia, 323
Lepidaplois, 314, 325
Lepidoblennius Steind., 348
Lepidoblennius Sauvage, *s*, 376
Lepidocephalichthys, 322
Lepidochætodon, 383
Lepidocottus, 380
Lepidocybium, 314
Lepidomeda, 375
Lepidomegas, *s*, 406
Lepidopsetta Gill, 317, 331
Lepidopsetta Gthr., 403
Lepidorhombus, 319
Lepidorhynchus, 398
Lepidosoma, *s*, 407
Lepidotrigla, 296
Lepidozygus, 318
Leporellus, 376, 410
Lepracanthus, 355
Leptagonus, 305
Leptarius, *s*, 324
Leptecheneis, *s*, 330
Leptobarbus, 288, 321
Leptoblennius, 295, 302
Leptobotia, 355
Leptobrama, 397
Leptocarcharias, *s*, 357
Leptocheles, *s*, 408
Leptochromis, 382
Leptoclinus, 302
Leptogadus, *d*, 325
Leptogaster, 362
Leptogobius, 373, 377
Leptogrammatolepis, *s*, 349, 350
Leptojulis, 309
Leptolepis, 345
Leptomylus, 354

Leptopegasus, 367
Leptoperca, 306
Leptophidium, 324
Leptopterygius, 300
Leptoscopus, 290
Leptosomus, 328
Leptosynanceia, 374
Leptotrachelus, 328
Lepturus, 302
Leucichthys, 375
Leucopsarion, 403
Leucoraja, 391
Leuresthes, 403
Leurynnis, *s*, 400
Liachirus, 319
Limia, 308
Limnurgus, *s*, 340
Linophora, 297
Liobagrus, 395
Liocæsio, 382
Liodesmus, 329
Liognathus, *s*, 371
Liomonacanthus, *s*, 340
Lioperca, *s*, 315
Liopropoma, 304
Liopsetta, 331
Liosaccus, 357
Lioscorpius, 403
Liposarcus, 332
Lisgodus, 380
Lissorhynchus, *s*, 287
Listracanthus, 359
Lithichthys, 356
Lithodoras, *s*, 311
Lobodus Ag., 320
Lobodus Costa, 340
Lonchopisthus, 316
Lophacanthus, *s*, 406
Lophiogobius, 369
Lophiopsides, 345
Lophiosilurus, 387
Lophodus Symonds, 309
Lophodus Romanowsky, *s*, 334
Lophodus Newberry & Worthen, *s*. 359
Lophogobius, 316
Lopholatilus, 400
Lophonectes, 403
Lophoprionolepis, *d*, 350
Lophopsetta, 303, 331
Loricariichthys, 311
Lucania, 290
Lucifuga, 298
Luciobrama, 355
Luciocharax, *s*, 401
Luciogobius, 290
Luciotrutta, 340
Lutkenia, *s*, 387
Lycengraulis, 351
Lycichthys, 389
Lycocyprinus, 353
Lycodalepis, 372
Lycodopsis, 399
Lycothrissa, 351
Lyrichthys, 370
Lythrurus, 386
Machærochilus, *s*, 369
Machairodus, *s*, 409
Machephilus, *s*, 346
Macolor, 294
Macrocephalus, *s*, 383
Macrochirichthys, 288
Macrodonophis, *s*, 347
Macrolepis, 327
Macronotothen, 306
Macropharyngodon, 309
Macrorhipis, *s*, 329
Macrozoarces, 325
Macruronus, 365
Macuroplus, 372
Mænas, *s*, 382
Mænichthys, *s*, 383
Malacobagrus, 312
Malacocentrus, 314
Malacocephalus, 318
Malacoctenus, 295
Malacorhina, 389
Mancalias, 394
Marcusenius, 314
Marracanthus, 381
Mascalongus, 396
Maynea, 361
Mayoa, 354
Megagobio, 386
Megalobrama, 364
Megalobrycon, *s*, 354
Megalocottus, 305
Megalolepis, 400
Megalopterus, 341
Megaperca, *s*, 395
Megapus, *s*, 339
Megarasbora, 351
Melambaphes, 326
Melamphaës, 333
Melanocetus, 333
Melanogenes, 321
Melanogrammus, 316
Melanonus, 394
Melanotænia, 316
Melletes, 398
Menephorus, 362
Menticirrhus, 304
Mentiperca, 315
Mesobatis, 391
Mesodmodus, 380
Mesogobius, 373
Mesogomphus, *s*, 320
Mesogonistius, 332
Mesolepis, 344
Mesonauta, 318
Mesopristes, *s*, 382
Mesops, 318
Mesopus, *s*, 313
Mesturus, 321
Metoponops, *s*, 331
Metrogaster, *s*, 300
Metynnis, 394
Micracanthus, *s*, 400
Micraspius, 354
Micristius, *s*, 337
Micristodus, *s*, 337
Microbuglossus, 319
Micrococlia, 328
Microconodus, *s*, 392
Microdesmus, 333
Microdus, *s*, 292
Microgadus, 337
Microgobius, 379
Microgrammatolepis, *s*, 350
Microlepidotus, 316
Micromesistius, 325
Micromesus, 337
Micromugil, *s*, 307
Microperca Putnam, 328
Microperca Castelnau, *s*, 362
Micropetalolepis, *s*, 349
Micropus, *s*, 352
Microsicydium, 373
Microspathodon, *d*, 318
Microtrigla, 369

Microzeus, 294
Mimoperca, *s*, 390
Minytrema, 395
Mionorus, *d*, 346
Mioplosus, 388
Mirbelia, 329
Mitrodus, *s*, 347
Mixogrammatolepis, *s*, 350
Mogurnda, 326
Moharra, *d*, 379
Monolene, 403
Monopleurodus, *s*, 409
Monoprion, 298
Morara, *s*, 287
Mormyrodes, 314
Moronopsis, *s*, 324
Mrigala, *s*, 287
Mullhypeneus, 347
Muraenolepis, 403
Murrayia, *s*, 362
Mycteroperca, 315
Mylax, *s*, 320
Myledaphus, 385
Mylocyprinus, 359
Myloleucus Cope, *s*, 363
Myloleucus Gthr., *s*, 369
Mylopharyngodon, 404
Mylorhina, 337
Myrichthys, 290
Myriolepis Egerton, 330
Myriolepis Lockington, *s*, 404
Myriosteon, *s*, 332
Myroconger, 357
Mystacoleucus, 351
Myxine, 406
Myxocyprinus, 394
Myxodagnus, 305
Myxus, 307
Myzopsetta, *s*, 303, 331
Nandopsis, 315
Nangra, 385
Nannaethiops, 361
Nannocampus, 357
Nannocharax, 345
Nannoperca, 307
Nannostomus, 365
Nanostoma, 390
Narcacion, *d*. 303, 340
Naucratopsis, 317
Nautichthys, 290
Navarchus, *s*, 289
Nealotus, 338
Neetroplus, 341
Nemacanthus, *s*, 327
Nematagnus, 305
Nematistius, 316
Nematobrotula, 325
Nematocentris, *s*, 342
Nematops, 403
Nematoptychius, 382
Nemochirus, *s*, 407
Neoanthias, *s*, 393
Neoarius, 388
Neoatherina, *s*, 378
Neoblennius, 378
Neocarassius, 363
Neoceratodus, *d*, 384
Neochaetodon, *s*, 368
Neochanna, 345
Neocirrhites, *s*, 368
Neoconger, 291
Neogunellus, *s*, 378
Neolabrus, 381
Neolethrinus, 378
Neoliparis, 381
Neomaenis, 291
Neomesoprion, *s*, 378
Neomordacia, *s*, 363
Neomuraena, *s*, 291
Neomyripristis, 367
Neomyxus, 397
Neoniphon, 378
Neoodax, *s*, 378
Neophrynichthys, 385
Neoplatycephalus, 362
Neoplotosus, 378
Neorhombus, 378
Neoscopelus, *s*, 378
Neosebastes, 345
Neosillago, 378
Neosilurus Steind., 348
Neosilurus Castelnau, *s*, 388
Neosphyraena, *s*, 362
Neosudis, 368
Neotephraeops, *s*, 362
Neptomenus, 297
Neotrygon, 368
Neozoarces, 406
Nesiarchus, 319
Notarius, 324
Nothobranchius, 353
Nothonotus, 328
Notoglanis, 332
Notograptus, 345
Notophthalmus, *s*, 292
Notoscopelus, 333
Novaculichthys, 309
Ochetobius, 351
Ochlodus, *s*, 347
Octinaspis, 377
Octogrammus, *s*, 372
Octonema, *s*, 352
Ocyurus, 315
Odontamblyopus, 374
Odontanthias, 367
Odonteleotris, 326
Odontobutis, 372
Odontogadus, 325
Odontogobius, 374
Odontolabrax, 367
Odontonectes, 291
Odontopyxis, 400
Odontoscion, 313, 315
Odontostilbe, 356
Oenoscopus, *s*, 330
Oligobelus, 356
Oligocephalus, 290
Oligolepis, 373
Oligoplites, 324
Oligorus, 291
Oligosarcus, 333
Omalopleurus, *s*, 368
Ompax, *d*, 399
Onchosaurus 408
Oncobatis, 362
Oncocottus, 302, 313
Oncopterus, 381
Oncorhynchus, 299
Oneiroides, 362
Onychodon, *s*, 364
Onychognathus, 343
Oolepis, *s*, 350
Ophioblennius, 296
Ophiocara, 326
Ophioclinus, 363
Ophiogobius, 326
Ophioscion, 324
Ophthalmolepis, 300
Ophthalmolophus, 296
Opisthistius, 316
Opisthocentrus, 352

Opisthonema, 303
Opisthopterus, 303
Opisthopteryx, 342
Opistocheilus, *s*, 287
Oplopomus, 299
Opsaridium, *s*, 351, 409
Opsariichthys, 322
Opsarius, *s*, 338
Opsopœodus, 403
Orcynopsis, 314
Oreias, *s*, 376
Oreonectes, 351
Orfus, *s*, 369
Oricardinus, 388
Orthichthys, 315
Orthodon, *s*, 295
Orthognathus, *s*, 366
Orthopleurodus, *s*, 405
Orthopristis, 291
Orthopsetta, 317
Orthostæchus, 316
Orthostomus, 352, 373
Orthurus, 341
Orycnus Gill, *s*, 315
Orycnus Cooper, *s*, 323
Osmerolepis, 379
Osphyolax, *s*, 379
Osteochilus, 351
Osteorachis, 349
Ostracacanthus, 399
Othos, 378
Otocinclus, 363
Owsianka, *s*, 313
Oxychætodon, 383
Oxycheilinus, 315
Oxyconger, 335
Oxyeleotris, 372
Oxyjulis, 325
Oxylabrax, *s*, 382
Oxylebius, 316
Oxyloricaria, 311
Oxymacrurus, 372
Oxymetopon, 300, 373
Oxymonacanthus, 340
Oxymormyrus, 372
Oxyporhampus, 326
Oxytomodus, 406
Oxyurichthys, 294
Pachychilon, 343
Pachymetopon, 291
Pachypops, 304
Pachystetus, *s*, 376
Pagrichthys, 293
Palædaphus, 329
Palænichthys, *s*, 370
Palæobrosmius, *s*, 292
Palæogadus, *s*, 292
Palæolycus, 327
Palæoscyllium, *s*, 298
Palæospinax, 365
Palanarrhichas, 361
Palimphemus, 319
Palinurichthys Bleeker, 288
Palinurichthys Gill, *s*, 295, 302
Paltodus, 409
Pammelas, *s*, 297
Panchax, *s*, 407
Pangio, *s*, 294
Pantodon, 391
Pantosteus, 384
Pappichthys, 368
Parabagrus, 312
Parabalistes, 340
Parabatrachus, 408
Parabembras, 372
Parabramis, 335
Paracæsio, 378
Paracara, *s*, 392
Paracanthobrama, 335
Paracentropogon, *d*, 384
Paracentropristes, 358
Paracetopsis, 312
Parachætodon, 372
Parachæturichthys, 374
Paracheilognathus, 322
Paracirrhites, *s*, 378
Paracobitis, 322
Paraconodon, 382
Paradanio, *s*, 337
Paradentex, *s*, 382
Paradiodon, *s*, 336
Paradiplomystax, *s*, 332
Paradiplomystes, 312
Paradules Blkr., *s*, 322
Paradules Klunzinger, *s* 366
Paraglyphidodon, 384
Paragobiodon, 367, 373
Paragoniates, 387
Paragonus Gill, 305
Paragonus Guichenot, 353
Parahemiodon, 311
Parajulis, 335
Paralaubuca, 335
Paraleuciscus, 406
Paraliparis, 393
Paralonchurus, 354
Paralosa, 362
Paraluteres, 340
Paralycodes, 372
Paramacrurus, 372
Parambassis, 374
Paramia, 322
Paramisgurnus, 397
Paramonacanthus Blkr., 340
Paramonacanthus Steind., 348
Paramyrus, 357
Paranandus, *s*, 336
Parancistrus, 311
Paranguilla, 335
Paranthias, 352
Parapegasus, 357
Paraperca, 380
Parapercis, 322
Paraphoxinus, *s*, 322
Paraplagusia, 336
Paraplesichthys, *s*, 383
Paraplesiops, 378, 383
Paraploactis, 335, 384
Parapocryptes, 374
Parapomacentrus, 387
Parapriacanthus 360
Parapristipoma, 367
Parapsettus, 381
Parapterois, 384
Pararhychobdella, 372
Paraschizothorax, 322
Parascopelus, 371
Parascorpæna, 384
Parascorpis, 377
Parascyllium, 306
Parasilurus, 310
Parastromateus, *s*, 336
Paratilapia, 348
Paratractus, 317
Paratrygon, 337
Paratylognathus, 405
Parauchenipterus, *s*, 311
Pardachirus, 319

Parephippus, *s*, 305
Pareques, 385
Parequula Steind., 401
Parequula Sauvage, *s*, 406
Paretroplus, 348
Parexocœtus, 340
Pariolius, 363
Paristiopterus, 382
Parma, 318
Parosphromenus, 398
Paroxyurichthys, 384
Parupeneus, *s*, 322
Pegusa, 319
Pelamichthys, *s*, 402
Pelecopterus, *s*, 379
Pelecorapis, 375
Peletrophus, 333
Pellonula, 351
Pelteobagrus, 335
Peltodus, *s*, 359
Peltopleurus, 341
Peltorhamphus, 319
Pelycorapis, 388
Pempherichthys, *s*, 361
Pentanemus, 296
Pentaroge, 296
Peplorhina, 368
Percalabrax, *d*, 291
Percamia, 382
Perccottus, 389
Percosoma, 304
Perigrammatolepis, *s*, 349
Periophthalmodon, *s*, 374
Periplectrodus, 380
Peripristis, *s*, 359
Peristethus, *s*, 292
Petalodopsis, *d*, 372
Petalolepis, *s*, 350
Petalorhynchus, 320
Petenia, 318
Petrocephalus, 334
Petrometopon, 337
Phacodus, *s*, 354
Phæthonichthys, *s*, 382
Phago, 337
Phagrus, 334
Phaneropleuron, 287
Phareodus, 370
Pharyngodopilus, *s*, 329
Phenacobius, 344
Phœbodus, 380
Phosichthys, 366
Photogenis, 344
Phricacanthus, *s*, 399
Phrynorhombus, 319
Phtheirichthys, 316
Physonemus, 407
Physopyxis, 363
Piabina, 343
Pikea, 377
Pimelodina, 387
Pimelometopon, 330
Pimelotropis, *s*, 289 (misprinted on page 289)
Pirarara, 312
Placopharynx, 356
Plagiognathus, *s*, 364
Plagioscion, 304
Plagiotremus, 323
Plagopterus, 375
Plagyodus, *d*, 345
Platacanthus Day, *s*, 337
Platacanthus McCoy, 408
Platycerhynchus, *d*, 330
Platychærops, 404
Platydoras, *s*, 311
Platyglossus, 309
Platygobio, 323
Platygobius, 373
Platyinius, 315
Platyodus, 379
Platypodon, 306, 331
Platypœcilus, 341
Platyrhinoidis, 402
Platysiagum, 365
Platysomatichthys, *s*, 310
Platystethus, *s*, 296
Platystomatichthys, 312
Platytroctes, 395
Plectranthias, 367
Plectroperca, *s*, 339
Plectroplites, 315
Plectrypops, 315
Plesiodus, 329
Plesioperca, *s*, 371
Plethodectes, 356
Pleuracromylon, *s*, 330
Pleuranacanthus, *s*, 336
Pleurodus, *d*, 366
Pleurogomphus, 320
Pleurogrammus, 305
Pleurolepis, *s*, 328
Plicodus, 377
Plinthicus, 354
Plintholepis, 334
Plinthophorus, 333
Pneumatosteus, 356
Podopteryx, 406
Podothecus, 304
Pœciloconger, 361
Pœcilodes, *s*, 328
Pœcilopsetta, 403
Pogoneleotris, 377
Pogonoperca, 291
Polistonemus, 305
Polyacanthonotus, 372
Polycaulus, 296
Polycirrhus, *s*, 354
Polyplacodus, *s*, 298
Polyprosopus, *s*, 313
Polypterolepis, *s*, 350
Polysteganus, 358
Pomacanthodes, 316
Pomataprion, *s*, 324
Pomatomichthys, *s*, 402
Pomatopsetta, *s*, 331
Pomatoschistus, *d*, 325
Pontinus, 299
Porobronchus, *s*, 297
Porocottus, 290
Porogobius, 373
Poronotus, 302, 314
Portheus, *d*, 364
Potamocottus, *s*, 307
Potamorhina, 394
Potamorrhaphis, 340
Potamotrygon, 389
Priacanthichthys, 349
Priodonophis, 297
Priolepis, 373
Prioniodus, 409
Prionobutis, 372
Prionognathus, 409
Prionolepis, 350
Priscacara, 388
Pristiapogon, 358
Pristiodon, 389
Pristocantharus, 316
Proamblys, 315
Probarbus, 405
Prochanos, 398
Prognathodes, 316
Prognathodus, 365

Prolatilus, 337
Prolebias, 376
Promicrops, 353
Promicropterus, 302
Pronotogrammus, 323
Properca, 405
Propoma, 403
Prosopium, 395
Prospinus, *s*, 308
Prostheacanthus, *s*, 294
Protamia, 370
Protautoga, 370
Proteracanthus, 291
Protistius, 375
Protocampus, 357
Protogaleus, *s*, 298
Protoporus, *s*, 363
Protosyngnathus, 386
Prototroctes, 333
Prymnetes, 360
Psalidostoma, 338
Psammobatis, 357
Psammodiscus, 319
Psenopsis, 314
Psephodus, 320
Psephurus, 369
Pseudacanthicus, *s*, 311
Pseudalutarius, 336
Pseudaluteres, *s*, 340
Pseudambassis, 383
Pseudamia, 336
Pseudancistrus, 311
Pseudageneiosus, 312
Pseudanthias, 367
Pseudapocryptes, 374
Pseudariodes, 312
Pseudarius, *s*, 311
Pseudaspius, 354
Pseudauchenipterus, 311
Pseudecheneis, 294
Pseudechidna, 322
Pseudeleginus, 371
Pseudetroplus, 318
Pseudeutropius, 310
Pseudoambassis, *s*, 393
Pseudobagrichthys, 312
Pseudobagrus, 293
Pseudobalistes, 340
Pseudobatrachus, 378
Pseudoberyx, 342
Pseudobrama, 355
Pseudocalophysus, *s*, 312
Pseudocetopsis, 311
Pseudochalceus, 327
Pseudocheilinus, 309
Pseudocoris, 309
Pseudoculter, 288
Pseudodax, 300
Pseudodon, *s*, 376
Pseudogobio, 287
Pseudogobiodon, 373
Pseudogramma, 378
Pseudohemiodon, 311
Pseudohypophthalmus, *s*, 312
Pseudojulis, 309
Pseudolabrus, 309
Pseudolates, *s*, 387
Pseudolaubuca, 335
Pseudoloricaria, 311
Pseudomonacanthus, 340
Pseudomoringua, 335
Pseudomugil, 334, 338
Pseudomuræna, *s*, 319
Pseudopangasius, 310
Pseudopentaceros, 382
Pseudoperilampus, 322
Pseudophoxinus, 288.
Pseudophycis, 318
Pseudopimelodus, 322
Pseudoplatystoma, 312
Pseudopleuronectes, 310
Pseudopriacanthus, 353
Pseudopristipoma, 405
Pseudopterus, *s*, 384
Pseudorasbora, 288
Pseudorhamdia, *s*, 310
Pseudorhombus, 310
Pseudorinelepis, 311
Pseudoscarus, 300
Pseudosciæna, *s*, 321
Pseudosebastes, 397
Pseudoserranus, *s*, 358
Pseudosphromenus, 398
Pseudosynanceia, 379
Pseudosyngnathus, 327
Pseudosynodontis, 311
Pseudotrachinus, 301, 309
Pseudothrissops, *s*, 381
Pseudotolithus, 321
Pseudotriakis, 349
Pseudovomer, 359
Pseudoxiphophorus, 287
Pseudupeneus, *d*, 310
Psychrolutes, 307
Psygmatolepis, *s*, 350
Ptereleotris, 326
Pterengraulis, 351
Ptericephalina, 338
Pterichthyodes, 289
Pteridium, *s*, 289
Pternodus, *s*, 347
Pterocæsio, 382
Pterocryptis, 308
Pterodoras, *s*, 311
Pterognathus, 290
Pterogobius, 326
Pterogrammatolepis, *s*, 350
Pteroidichthys, 384
Pteronemus, 383
Pterophryne, *s*, 324
Pteropsarion, 351
Pterothrissus, 390
Pterygopterus, *s*, 346
Ptychobarbus, 343
Ptychochromis, 406
Ptycholepis, *s*, 350
Ptyonodus, *s*, 388
Ptyonotus, *s*, 296
Puntazzo, 383
Pygosteus, 302
Pythonichthys, 347
Quassilabia, *d*, 395
Rasbora, 288
Rasborichthys, 288
Reinhardtius, 302
Remilegia, 316
Remora, 316
Remoropsis, 324
Reniceps, 306
Retropinna, 313
Rhabdofario, 356
Rhabdolepis, *s*, 327
Rhadinichthys, 392
Rhamphobatis, *s*, 307
Rhamphoberyx, *s*, 324
Rhamphocottus, 375
Rhamphosternarchus, *s*, 357
Rheocrypta, 390
Rhina, *s*, 306
Rhineastes, 364
Rhinobagrus, 335

Rhinoberyx, *s*, 315
Rhinodoras, *s*, 311
Rhinoglanis, 332
Rhinogobio, 355
Rhinogobius, 290
Rhinomugil, 324
Rhinonemus, 325
Rhinoplagusia, 355
Rhinoscion, 304
Rhinoscymnus, 331
Rhinotriacis, 317
Rhizodopsis, 344
Rhodichthys, 393, 402
Rhombatractus, *s*, 399
Rhombochirus, 324
Rhomboplites, 315
Rhomboptychius, *s*, 344
Rhombosolea, 319, 326
Rhombotides, *s*, 322
Rhynchana, *s*, 407
Rhynchodus, 371
Rhytiodus, 292
Richardsonia Steind., *s*, 343
Richardsonia Castelnau, *s*, 362
Rineloricaria, 311
Rinodus, *s*, 342
Riverina, *d*, 362
Rivulus, 299
Rœboides 333
Rœstes, 333
Rohitichthys, 287
Rohitodes, 321
Rohteichthys, 288
Roncador, 403
Rubellus, *s*, 369
Ruppelia, *s*, 367
Saccarius, 307
Saccodon, 327
Sagenodus, 347
Salangichthys, 293
Salarichthys, 346
Sandalodus, 342
Sandelia, *s*, 301
Saraca, 381
Sarcidium, *s*, 363
Sarcocheilichthys, 288, 353
Sarcodaces, 333
Sardinia, 299
Sargosomus, *s*, 300
Sarothrodus, *s*, 304, 316
Satanoperca, 318
Saurenchelys, *s*, 334
Saurogobio, 355
Scaldia, *s*, 361
Scaphaspis, *s*, 338
Scaphirhynchops, *d*, 323
Scardiniopsis, *s*, 334
Scarichthys, 287
Scarostoma, *d*, 346
Schacra, 351
Schipa, *s*, 354
Schistorus, 315
Schizopygopsis, 343
Schuettea, 343
Sciænoides, *s*, 294
Sciænops, 323
Scissor, 333
Scleromystax, 332
Scleropages, 333
Scolecosoma, *s*, 291
Scomberodon, 360
Scombroclupea, 327
Scombrocottus, *s*, 366
Scopelosaurus, 294
Scorpænopterus, 293
Scrobodus, *s*, 327
Scymnodon, 329
Scytalina, *d*, 404
Sebastapistes, 397
Sebastichthys, 317
Sebastodes, 305
Sebastomus, 330
Sebastoplus, 324
Sebastopsis Gill, *s*, 316
Sebastopsis Sauvage, *s*, 371
Sebastosomus, 330
Securicula, *s*, 351
Sema, *s*, 396
Semicossyphus, 308
Semilabeo, 405
Semiplotus, 287
Seriolophus, *s*, 345
Seriphus, 293
Serratodus, *s*, 396
Setarches, 319
Shacra, 288
Siaja, 288
Sicydiops, 373
Sicyogaster, *s*, 295
Sicyopterus, 295
Sillaginodes, 306
Sillaginopsis, 306
Silurodes, 293, 312
Silurodon, 334, 338, 367
Sinibarbus, 376
Siniperca, 313
Siphagonus, *s*, 387
Smaragdus, *s*, 299
Smiliogaster, *s*, 288
Soleichthys, 294
Solenichthys, *d*, 336
Solenodus, 377
Solenognathus, *s*, 342
Solenomormyrus, 372
Solenostomus, *s*, 302
Soleotalpa, *s*, 319
Sorubimichthys. 312
Sparactodon, *s*, 405
Sparoides, 376
Sparopsis, *s*, 352
Spathodactylus, 292
Sphærichthys, 295
Sphagepœa, *s*, 356
Sphagomorus, 344
Sphœrolepis, 389
Sphyrænops, 299
Sporetodus, *s*, 375
Sporolepis, 334
Squalidus, *s*, 364
Squaliobarbus, 351
Stemmatodus St. John & Worthen, *s*, 380
Stemmatodus Heckel, 409
Stenogobius, 373
Stenophus, 378
Stenopterodus, *s*, 405
Stephanolepis, 304
Stereodus, 339
Sterledus, *s*, 354
Sternotremia, *s*, 386
Stethaprion, 356
Stethojulis, 308
Stichæacanthus, 396
Stichæopsis, 360
Sticharium, 345
Stigmatogobius, 374
Stigmatonotus, 386
Stilbius, *s*, 337
Stomiasunculus, *s*, 297
Strabo, *s*, 341
Stratodus, 364

Streblodus, 320
Strepsodus, 344
Strigilina, *s*, 388
Stromatoidea, 301
Strosipherus, *s*, 409
Stygicola, 325, 339
Stygogenes, 332
Syllæmus, 379
Symmetrurus, *s*, 396
Symphorus, 365
Symphysanodon, 393
Sympterichthys, 394
Synagris, *s*, 291, 383
Synanchia, *s*, 374
Synaphobranchus, 319
Synchiropus, 290
Synchismus, *s*, 306
Syncrossus, *s*, 294
Synechogobius, *s*, 326
Synistius, 315
Synnema, 369
Tachynectes, 328
Tæniolabrus, *s*, 348
Tæniophis, *s*, 297
Tæniotoca, 300
Tambra, 288
Tanaodus, 380
Tauridea, *d*, 395
Taurinichthys, 329
Tautogolabrus, 318
Telara, 351
Teleosaurus, *s*, 346
Telepholis, 339
Telescops, *s*, 382
Tephræops, 291
Tephrinectes, 319
Tephritis, *s*, 318
Tetheodus, 375
Tetrabrachium, 403
Tetrades, *s*, 335
Tetragonoptrus, *s*, 348, 383
Tetranarce, 307
Tetranematichthys, *s*, 312
Tetraroge, 296
Thalassophryne, 307
Thaleichthys, 290
Thaumatacanthus, 401
Thelodus, *s*, 309
Therapaina, *s*, 298, 383
Theraps, 318
Thlattodus, *s*, 342
Tholichthys, *s*, 351
Thrinacodus, 380
Thrissopater, 365
Thrissopteroides, 370
Thynnichthys Blkr., 288
Thynnichthys Giglioli, *s*, 402
Thyris, *s*, 403
Thyrsitocephalus, 292
Thyrsitops, 314
Thysanocheilus, *s*, 338
Thysanopsetta, 403
Tomodon, 338
Tomodus, 320
Torresia, 378
Toxabramis, 369
Trachelocirrus, *s*, 323
Trachelyopterichthys, 311
Trachinocephalus, 303
Trachinopsis, 380
Trachurops, 316
Trachybrama, *s*, 322
Trachypoma Gthr., 291
Trachypoma Giebel, *s*, 357
Trachyrincus, 407
Tremataspis, *d*, 343
Triænaspis, 394
Triænopogon, 373
Tribranchus, *s*, 407
Trichidion, *s*, 302
Trichiurichthys, 371
Trichiurides, 398
Trichocyclus, *d*, 357
Trichodiodon, *d*, 340
Trichophanes, 364
Trichopsis, *s*, 295, 298
Trifarcius, *s*, 299
Trigloides, 360
Trigonodus Newberry & Worthen, *s*, 342
Trigonodus Winkler, *s*, 398
Triloburus, *s*, 302
Trinematichthys, 288
Triportheus, 363
Tripterodon, 343
Trisotropis, 337
Tristichopterus, 301
Trochocopus, 318
Tropidinius, 353
Tropidodus, 317
Trypauchenichthys, 293, 374
Tydeus, *s*, 359
Tylometopon, 367, 383
Tyntlastes, 319
Typhlichthys, 290
Typhlogobius, 406
Typhlonus, 394
Typhlus, *d*, 357
Ulocentra, 395
Upselonphorus, *s*, 305
Uranichthys, *s*, 347
Uranoblepus, *s*, 302
Uranoplosus, 401
Uranostoma, *s*, 336
Urocampus, 357
Urocentrus, *s*, 352
Urocomus, 312
Uronectes, *s*, 318
Urophycis, *d*, 325
Uropsetta, *s*, 317
Uropterina, 338
Urotrygon, 324
Vaillantia, 395
Valenciennea, 348
Valenciennesia, *s*, 348, 373
Vandellia, 407
Vaticinodus, *s*, 405
Venustodus, 380
Verilus, 298
Vexillifer, *s*, 357
Vimba, *s*, 368
Vincentia, *s*, 363
Vulsus, *s*, 307
Wallago, 312
Wardichthys, 382
Wertheimeria, 386
Xenichthys, 324
Xenisma, 390
Xenocharax, 345
Xenocypris, 351
Xenodermichthys, 395
Xenomystus Gthr., 351
Xenomystus, Lütken, s, 370
Xenotis, 390
Xiphactinus, *d*, 358
Xiphidion, *d*, 290
Xiphiorhynchus, 360
Xiphister, *d*, 400
Xiphodolamia, 391
Xiphogadus, 318

Xiphotrygon, 399
Xystracanthus, 292
Xystreurys, 403
Xystrodus Plieninger, 298
Xystrodus Ag., *s*, 320
Xystroplites, 388, 390
Yarra, *s*, 363
Zanclorhynchus, 403
Zantecla, *s*, 367
Zapteryx, 404
Zathorax, 363
Zenarchopterus, 326
Zenopsis, 314
Zeodrius, *s*, 393
Zonogobius, 374
Zopa, *s*, 368
Zophendum, *s*, 396

LELAND STANFORD JUNIOR UNIVERSITY PUBLICATIONS
UNIVERSITY SERIES

Studies in Ichthyology

A Monographic Review of the Family of Atherinidae or Silversides

BY

DAVID STARR JORDAN
Chancellor-Emeritus of Stanford University
AND
CARL LEAVITT HUBBS
Curator of Fishes, Field Museum

STANFORD UNIVERSITY, CALIFORNIA
PUBLISHED BY THE UNIVERSITY
DECEMBER 18, 1919

Stanford University
Press

CONTENTS

PAGE
Atherinidæ or Silversides 5
Families of Percesoces 6
Fossil Atherinidæ 9
Rhamphognathus 9
Mesogaster 10
Zanteclites 10
Genera of Atherinidæ 12
Nannatherina 19
Bedotia 19
Rheocles 20
Centratherina 21
Chilatherina 22
Anisocentrus 22
Rhombosoma 23
Melanotænia 24
Glossolepis 26
Rhadinocentrus 27
Atherinosoma 27
Pseudomugil 28
Telmatherina 29
Atherion 29
Hepsetia 31
Atherina 35

PAGE
Genera of Atherinidæ (Con't):
Craterocephalus 42
Iso 47
Menidia 49
Archomenidia 54
Hubbesia 56
Membras 56
Thyrina 58
Thyrinops 61
Atherinella 62
Eurystole 62
Pseudothyrina 63
Kronia 63
Odontesthes 64
Austromenidia 64
Chirostoma 68
Leuresthes 81
Labidesthes 83
Xenatherina 83
Colpichthys 84
Atherinops 84
Atherinopsis 85
Basilichthys 86

348484

A MONOGRAPHIC REVIEW OF THE FAMILY OF ATHERINIDÆ OR SILVERSIDES

By David Starr Jordan and Carl Leavitt Hubbs

The present paper contains a review of the genera, with an annotated list of the known species, of the fishes of the family Atherinidæ, known as "Silversides" in the eastern United States; as "Hardyheads" in Australia; as "Joel," "Sauclet," etc., in France; "Epseto" and "Lattarina" in Italy, and throughout Latin America as "Fishes of the King" (Pesce-re, Peixe-rei, Pexerey, Pescado del Rey, Peje-rei, Peje-rey, Pejerrey). The majority of the species are tropical, though many are found within the temperate zones. Some are marine living along sandy shores, some in the sluggish estuaries of rivers, a few in mountain torrents, or lakes; seldom in muddy water. None are known from the depths of the ocean: they are closely confined everywhere, both to the surface and to the shore-line. The species are usually small, the tropical ones almost uniformly so, attaining a length of from two to six inches; in the temperate regions of the New World some reach a length of between one and two feet.

For more than seventy-five years after the tenth edition of the *Systema Naturæ* was published, Atherina remained the only named genus of its group. The first generic divisions were made by Bonaparte in 1837; by Swainson, in 1839; by Bleeker, in 1853; and by Girard, in 1854. In his *Catalogue,* however, Günther (1861) recognized but two genera, Atherina and an unnatural assemblage for which he chose the name Atherinichthys. Since that time, however, numerous genera have been described. In the present review, we accept 38 genera and two subgenera as valid. Similarly most of the species remained long unknown. Linnæus knew but one, Atherina hepsetus. Valenciennes in 1835 listed 28 species; Günther in 1861 described but 38. Considering only the North and Middle American species, Jordan and Evermann in 1896 accepted 34. We now list 149 species and subspecies.

List of the New Subfamilies, Genera and Species Described in This Paper

Nannatherininæ, new subfamily
Bedotiinæ, new subfamily.
Rheoclinæ, new subfamily.
Atherion maccullochi, new species.

ARCHOMENIDIA, new genus (SALLEI).
CHIROSTOMA REGANI, new species.
CHIROSTOMA CONSOCIUM, new species.

The ATHERINIDÆ find their place in the suborder PERCESOCES, a group which, from time to time, has been variously enlarged to include a number of unrelated families. It should apparently be restricted, at least insofar as the living forms are involved, to include only the SPHYRÆNIDÆ (Barracudas), MUGILIDÆ (Mullets), and the ATHERINIDÆ. The peculiar fishes comprising the family POLYNEMIDÆ (RHEGNOPTERI, or POLYNEMOIDEA) are superficially much like the MUGILIDÆ, and structurally resemble the PERCESOCES, especially the SPHYRÆNIDÆ, quite closely.[1] The two groups should perhaps be united to form the primary subdivisions (MUGILOIDEA, POLYNEMOIDEA) of the PERCESOCES. The relationships of the ATHERINIDÆ to the MUGILIDÆ and SPHYRÆNIDÆ are indicated by the following analytical key:

Key to the Families of the Percesoces

*a*¹. Lateral line present, continuous; pectoral fin placed rather low; mouth usually larger, with stronger teeth, especially on the palate; teeth implanted in deep sockets; maxillary with a supplementary bone forming a knob-like projection posteriorly; "third and fourth superior pharyngeals separate; supraclavicle not reduced in size; lower limb of post-temporal not attached to opisthotic by suture; exoccipitals meeting above basioccipital; alisphenoids meeting; ethmoid a thin plate, entirely superior, extending to and forming edge of rostrum; anterior neural spines normal; parapophyses not developed on anterior vertebræ,"[2] directed downward; vertebræ 24.................SPHYRÆNIDÆ

*a*². Lateral line absent, or very incompletely and irregularly developed; pectoral fin placed high (NANNATHERINA excepted); mouth generally smaller, usually with fine teeth, which are never imbedded in deep sockets;[3] palatine teeth fine (ATHERINOSOMA excepted), or absent; no supplementary bone on maxillary; "third and fourth superior pharyngeals of each side anchylosed; supraclavicle reduced in size; lower limb of post-temporal attached to opisthotic by ligament or suture; exoccipitals not meeting above basioccipital; alisphenoids not meeting; ethmoid normal, not overlying prefrontals and vomer or extending to lateral edge of rostrum; anterior neural spines laterally flattened; parapophyses developed on all abdominal vertebræ" (Starks, *l. c.*), directed outward.

  *b*¹. Vertebræ 24 to 26; anal fin with two or three spines; head more obtuse; "lower limb of post-temporal attached to cranium by dentate suture; basisphenoid absent; myodome not opening to exterior posteriorly; foramen magnum region produced; superior pharyngeals of complex shape, not bearing teeth" (Starks, *l. c.*)...MUGILIDÆ

---

[1] Regan, *Proc. Internat. Zool. Congr.*, 7, 847, 1907 (1912; adv. prints 1910).

[2] Starks, *Proc. U. S. Nat. Mus.*, 22, 1-10, pls. 1-3, 1910 (October 7, 1899).

[3] In some species of CHIROSTOMA, as C. SPHYRÆNA, the gape is wide, and the teeth strong and set in shallow sockets, thus approaching those of SPHYRÆNA.

b^2. Vertebræ more than 30; anal fin with a single spine (3 in NANNATHERINA); head sharp; "lower limb of post-temporal attached to opisthotic by ligament; basisphenoid developed; myodomè opening to exterior posteriorly; region about foramen magnum not produced; superior pharyngeals typical in shape, bearing teeth" (Starks, *l. c.*)..ATHERINIDÆ

It is evident from the foregoing analysis that each of the three families possesses certain primitive traits, and that each is highly modified in its own direction.

The PERCESOCES have usually been defined as teleost fishes with cycloid scales, a spinous dorsal, and with ventral fins composed of a spine and five soft rays, subabdominal in position. A view of their relationships which has long remained in favor was expressed by Jordan and Evermann[4] in these words: "The suborder marks a transition from soft-rayed to spiny-rayed fishes, its nearest relatives among the latter being, perhaps, the Scombroid forms." Professor E. C. Starks, in a paper on "The Osteological Characters of the Fishes of the suborder PERCESOCES,"[5] wrote:

"In examining the crania of these species attention is attracted at once to the fact that in all of them the epiotics are developed into long, thin processes which divide into more or less bristle-like filaments.

"There is little else in purely internal characters whereby to differentiate these families as a group from the other ACANTHOPTERI. In order so to differentiate them we must turn to the well-known external characters—a spinous dorsal in conjunction with the abdominal ventral fins, high pectoral fins and unarmed opercles."

The taxonomic value of these minor differences may be questioned, inasmuch as the PERCESOCES are so like the typical percoid fishes in general structure. Unarmed opercles, not being rare in the PERCOIDEA, offer no substantial character upon which to define the group. Similarly the scales of many percoids, having lost their armature, are secondarily cycloid; in some of these cases, as in certain EMBIOTOCIDÆ, the finer structure of the scale is closely similar to that of the PERCESOCES: consequently the scales of this group may have developed from a typical ctenoid type. The pectoral bases, especially in the MUGILIDÆ and ATHERINIDÆ, are higher and more oblique than in typical perch-like fishes, but in one genus of the ATHERINIDÆ, NANNATHERINA, the pectorals are "Symmetrical, rounded, placed rather low (as in normal Perciform fishes rather than as in other Atherinids)."[6] The flexibility of the dorsal spines in the PERCESOCES, and their separation from the soft rays as a distinct fin, are characters paralleled in several groups of obviously percoidean ancestry; moreover, in NANNATHERINA the dorsals are joined at their base, and in other genera of the ATHERINIDÆ the dorsals are closely approximated; in the MUGILIDÆ and in certain genera of the ATHERINIDÆ (NANNATHERINA, CENTRATHERINA), the dorsal spines are all pungent. The caudal fin of the PERCESOCES has been described as diphycercal, but in SPHYRÆNA, as in many typical percoids, only two of the neural and hæmal spines enter into the support of the procurrent caudal rays; in the ATHERINIDÆ, in which the vertebræ are increased in number, more vertebral spines (four in CHIROSTOMA HUMBOLDTIANUM) are included in the skeletal base of the caudal fin. There remains of the known diagnostic features of the PERCESOCES but one, namely the abdominal position of the ventral fins, which indicates a close relationship with the soft-rayed fishes. In the MUGILIDÆ and in certain ATHERINIDÆ, however, the pelvic bones are close to the pectoral arch: the ventral fins are "subabdominal." Moreover the pelvic bones of these forms are attached by ligament to the pectoral girdle, a fact which has led Dollo[7] to consider the ventrals of the ATHERINIDÆ to be secondarily abdominal. Regan[8] likewise, has recently included the PERCESOCES among the PERCOMORPHI of his system. The lack of the orbitosphenoid in the PERCESOCES; the number of caudal rays (15 branched, 17 in all, excluding the procurrent rays); the number of anal spines (three in most of the MUGILIDÆ and in NANNATHERINA, fewer in the other forms; the constant occurrence of a spine and five soft rays in the ventral fin, point positively to the same conclusion, namely, that the PERCESOCES are of percoidean ancestry, and that the group is not transitional between the soft-rayed and the spiny-rayed fishes.

---

[4] *Bull. U. S. Nat. Mus.*, 47, pt. 1, 788, 1896.

[5] *Proc. U. S. Nat. Mus.*, 22, 1-10, pls. 1-3, 1900 (Oct. 7, 1899).

[6] Regan, *Ann. Mag. Nat. Hist.* (7), 18, 451, 1906.

If the PERCESOCES are of percoidean ancestry, as the foregoing evidence leads us to believe, then we have some basis upon which to determine the most probable evolutionary sequence of the genera within the family ATHERINIDÆ. The most evidently perch-like, and consequently very probably the most primitive of the atherine fishes, is NANNATHERINA[9], a fresh-water fish of Western Australia: its perch-like features are its moderately robust body; wide mouth; eight or nine pungent spines in first dorsal; the connection of the two dorsals; three anal spines; symmetrical, rounded, low pectorals; anteriorly inserted ventrals; 31 (14+17) vertebræ, fewer than in any other atherine so far as known. BEDOTIA, from the mountain streams of Madagascar, resembles NANNATHERINA and differs from other atherine genera in having the caudal rounded, and in having the premaxillaries little protractile; as in that genus, the gill-rakers are greatly reduced, the body is rather robust, the mouth large, the ventrals inserted forward; the dorsal fins are separated, however, and the structure of the mouth is peculiar. In RHEOCLES, which also inhabits the fresh waters of Madagascar, the dorsal fins are closely approximated, the caudal is emarginate and the structure of the mouth is normal, the body robust; both BEDOTIA and RHEOCLES thus show relationships with NANNATHERINA. In the MELANOTÆNIINÆ of the fresh waters of Australia, New Guinea, and neighboring islands, the body is typically robust, the ventrals inserted well forward, the dorsals closely approximated, and the first dorsal spine usually pungent. In one genus, CENTRATHERINA, the spines are all pungent; in RHADINOCENTRUS all are flexible, as also in TELMATHERINA and PSEUDOMUGIL, genera which show an approach toward the more typical members of the subfamily ATHERININÆ. The large group of genera comprising the ATHERINOPSINÆ, and confined wholly to the Americas, are doubtless derived from the ATHERININÆ. Each of these groups of the ATHERINIDÆ, however, is specialized in its own way: NANNATHERINA and BEDOTIA have the caudal rounded, and the premaxillaries little protractile; BEDOTIA has the mouth peculiar in structure; RHEOCLES has few and very short gill-rakers; most of the MELANOTÆNIINÆ have the anal fin greatly elongate and the belly unusually short; the ATHERININÆ have the anus usually inserted forward of its normal position; the ATHERINOPSINÆ have the gape arched and the premaxillaries widely dilated posteriorly. Of all the groups however, the ATHERINOPSINÆ are the least perch-like, and for that reason may be placed at the end of the series.

---

[7] *Verh. Zool.-bot. Ges. Wien*, 59, 135-140, 1909.

[8] *Ann. Mag. Nat. Hist.* (8), 12, 111, 1913.

[9] Regan, *Ann. Mag. Nat. Hist.* (7), 18, 451, 1906.

Despite the wide range of variation exhibited by them, the numerous genera of the ATHERINIDÆ (NANNATHERINA perhaps excepted) form a compact and obviously natural group. The few fossils known appear to belong in or near ATHERINA or in one case perhaps approaching MELANOTÆNIA.

Of the fossil ATHERINIDÆ, not much is known. The type is not ancient and may be as already suggested a comparatively modern offshoot from ancestors of the APOGONIDÆ, or AMBASSIDÆ.

The European fossils from the Upper Eocene and Miocene referred to ATHERINA seem to belong to that genus or to HEPSETIA which as fossil could hardly be distinguished.

A second genus, RHAMPHOGNATHUS Agassiz, has the jaws produced, the snout ending in an acute point. In this form, as in ATHERINA, the premaxillary border is straight, not curved as in LABIDESTHES and American forms generally. RHAMPHOGNATHUS PARALEPOIDES Agassiz is from the Upper Eocene, at Monte Bolca, Verona.

Another species from the same locality, called Mesogaster sphyrænoides Agassiz, has also a produced snout, the premaxillary border being straight, as in Atherina, not curved as in most American forms. Mesogaster is a less elongate fish than Rhamphognathus, but it belongs to the general Atherina type.

In a paper lately published,[10] Dr. David Starr Jordan and J. Z. Gilbert describe a new genus of fossil Atherinidæ from the Monterey Miocene deposits of Southern California. This genus, Zanteclites, (hubbsi) in its relatively few vertebræ, in the approximation of the dorsal fins, and in the comparatively large and subfilamentous first dorsal, suggests certain genera living in Australia and Madagascar, which, as we have already indicated, may be among the more primitive forms of this type.

ZANTECLITES HUBBSI Jordan and J. Z. Gilbert (*l. c.* 39)

(Plate XI, Fig. 40)

A little fish about four inches long, from the Puente diatomaceous shales (Miocene) at Elmodena, Orange County, and at Shorb, Los Angeles County, California, almost certainly belongs to the Atherinidæ. It is referable, however, to neither the Atherininæ nor the Atherinopsinæ, the two groups now living in the Holarctic Realm, being more primitive than any of the genera of either subfamily. Its primitive features at once apparent are the relatively few vertebræ, the approximation of the dorsal fins, and the relatively large first dorsal fin composed of spines comparatively well spaced and fairly robust basally. Among living genera Zanteclites bears the closest resemblance to Rheocles of Madagascar and Pseudomugil of Australia and New Guinea, types which we regard as relatively primitive among the Atherinidæ. From both of these genera Zanteclites is sufficiently distinguished by the characters of the dorsal fins.

In the type-specimen of Zanteclites hubbsi the tail and trunk are well preserved by a rather clear impression in the diatomaceous shale, but the head has been crushed so that the cranium is seen in dorsolateral aspect, while the opercles and shoulder girdle are below their normal position.

The top of the cranium resembles that of Atherina rather closely, the wide supraorbital laminæ being separated from the rest of the frontal by deep grooves widely divergent posteriorly. The length of the cranium to the anterior end of the frontal bone appears to be contained four times in the length of the vertebral column, the interorbital width, about 10 or 11 times. The snout and jaws are not preserved in this specimen. Another, from Shorb, shows the mouth oblique, of moderate extent; the outline of the premaxillary nearly straight, a little curved forward at tip.

---

[10] *Fossil Fishes of Southern California*, by David Starr Jordan and James Zaccheus Gilbert, Leland Stanford Jr. University Publications, 1919.

Vertebræ $16 + 19 + 1 = 36$, the precaudal portion scarcely shorter than the caudal. Apparently all of the precaudals bear pleurals, and traces of epipleurals persist. The neural and hæmal spines are rather short, and the vertebræ are rather slender. As in ATHERINA, the spines from about five vertebræ support the procurrent caudal rays, the uppermost and lowermost of the principal caudal rays impinging on the tips of the hypural. This is an important family character.

Spinous dorsal well developed, and submedian in position, its origin probably being a little nearer tip of snout than base of caudal. Spines VIII, rather crowded, but more widely spaced than in the ATHERININÆ or ATHERINOPSINÆ, supported by interneurals attached apparently to the neural spines of vertebræ 6 to 12. First dorsal spine short, the second about as long as base of fin, the rest elongate, and evidently filamentous distally, about as high as the body is deep. Second dorsal adjacent to the first dorsal, its first ray (probably a slender spine) attached to the interneural immediately following the one supporting the last spine of the first dorsal; four or five other rays can be distinguished, the height of the longest perhaps a little greater than length of first dorsal base.

Caudal fin forked, each lobe so far as preserved a little shorter than depth of body or height of dorsal spines; uppermost and lowermost developed rays robust and simple; the other rays branched, becoming more slender toward middle of fin. The procurrent caudal rays are well developed.

Anal fin short, falcate in outline, its height about equal to depth of caudal peduncle. The first ray is probably a short spine similar to the first in the spinous dorsal, and is followed by about 10 or 11 longer rays. The origin of the anal is considerably posterior to that of the second dorsal.

The pectoral is obviously represented by several detached rays and by two rays which appear to be *in situ* at the lower hinder end of the pectoral base, opposite the angle near the upper end of the clavicle, but rather distant from it. The fin is narrow and long, as long as the head. In its position it resembles closely that of the living ATHERINIDÆ (NANNATHERINA excepted) in its oblique base and high insertion. The hypocoracoid is seemingly represented, as in ATHERINA, by a large plate. (The ventral fins do not show in the photograph, but part of the fin is fairly evident in the actual type-specimen. They are inserted nearly midway between base of pectoral and that of anal, under the fifteenth vertebra.)

The scales are large and round, without trace of apical teeth; they are evident over most of the body, and are about as numerous in median series as the vertebræ.

By including in the following key the ranges of the several subfamilies and the numerous genera comprising the family ATHERINIDÆ, we indicate the main features of the geographical distribution of these fishes.

ANALYSIS OF THE LIVING GENERA OF ATHERINIDÆ.

a^1. NANNATHERININÆ: Anal fin composed of three spines and eight or nine soft rays, opposite the first dorsal and similar to it; dorsal fins joined at base, the first of eight or nine pungent spines; pectorals symmetrical, rounded, placed rather low; the ventrals inserted near pectorals; caudal rounded; vertebræ 31; body comparatively robust; mouth wide, oblique, the maxillary exposed distally and extending to below the eye; premaxillaries little protractile; teeth on jaws, vomer, and palatines; gill-rakers reduced to short projections. *Streams of Western Australia*............................ 1. NANNATHERINA.

a^2. Anal fin with a single spine, its origin usually in advance of that of second dorsal; dorsal fins separate, the first usually with fewer than eight spines, usually flexible; pectorals scythe-shaped, pointed, inserted high; vertebræ, so far as known, more numerous.

b^1. BEDOTIINÆ: Caudal fin truncate and rounded; dorsal fins separated, the first of five flexible spines, originating slightly in advance of anal; anal fin composed of a spine and 14 to 19 soft rays; ventrals inserted not far behind pectorals; body rather robust; head naked; mouth large, extending to below eye, lower jaw projecting; premaxillaries little protractile, the anterior part separated by a notch from the lateral. *Streams of Madagascar*......2. BEDOTIA.

b^2. Caudal fin forked; head scaly, at least on sides; premaxillaries fully protractile, the anterior part not separated by a notch from the lateral.

c^1. Dorsal fins rather closely approximated, the height of the first being much greater than the disttance between the origins of the two fins; body more or less robust, and strongly compressed; vertebræ few (33 to 37 in genera described).

d^1. RHEOCLINÆ: Dorsal fins very closely approximated, the first without filamentous nor pungent spines; anal fin of moderate length, with 14 to 16 soft rays; belly rather short; fewer than 12 conical gill-rakers on lower limb of first arch; mouth rather large, extending to below eye; lower jaw projecting; teeth on jaws, vomer, and palatines. *Fresh waters of Madagascar* ....3. RHEOCLES.

d^2. MELANOTÆNIINÆ: Dorsal fins usually less closely approximated (but not widely separated), the first spine usually pungent, at least one of the spines always filamentous in the male (except in CENTRATHERINA, in which all of the spines are pungent); anal fin usually elongate; belly more or less shortened. *Fresh waters of Australia, New Guinea, and neighboring islands.*

e^1 Anal fin much elongate, its origin before, or not far behind, that of the first dorsal; first ray of both dorsals and of anal a strong pungent spine (except in RHADINOCENTRUS); body typically very deep and sharply compressed; head depressed, and pointed.

f^1. All of the dorsal spines pungent; jaws and dentition as in CHILATHERINA. *Fresh waters of northern New Guinea*....4. CENTRATHERINA.

f^2. Only the first spine of both dorsals pungent.

g^1. Lower jaw included; gill-rakers few.

h^1. Mouth rather small, with a straight or slightly curved gape; anterior expansion of premaxillaries little developed; teeth of outer mandibular series enlarged.

i^1. Inner band and outer series of teeth in lower jaw not separated by an interspace; outer side of upper jaw with several series of teeth projecting from the thick lip. *Fresh waters of northern New Guinea* ....5. CHILATHERINA.

i^2. Inner band and outer series of teeth in lower jaw separated by an interspace; outer side of upper jaw with few or no teeth. *Fresh waters of New Guinea and Aru.* ....6. ANISOCENTRUS

h^2. Mouth rather large, with a curved gape; premaxillaries with a well developed anterior expansion; series of teeth extending to outer side of jaws; outer series of teeth not enlarged. *Fresh and brackish waters of New Guinea and neighboring islands.*
7. RHOMBOSOMA.

g^2. Jaws equal anteriorly, or the lower slightly projecting; anterior expansion of premaxillaries fitting an emargination in the lower jaw; outer series of teeth in jaws enlarged; teeth also present on vomer and palatines.

j^1. Scales large (32 to 37), with edges nearly or quite entire; gill-rakers of moderate length, 12 to 16 on lower limb of outer arch; teeth in jaws conical. *Fresh and brackish waters of Australia, New Guinea, and neighboring islands*....................8. MELANOTÆNIA.

j^2. Scales small (55 to 60), with edges deeply crenulated; gill-rakers fine and long, 30 on lower limb of outer arch; teeth in jaws stouter and more obtuse. *Fresh waters of northern New Guinea.*
9. GLOSSOLEPIS.

f^3 All of the fin spines flexible; lower jaw projecting; palate apparently toothless; scales large, with edges nearly or quite entire. *Fresh waters of Queensland.* ....10. RHADINOCENTRUS.

e^2. Anal fin less elongate, placed well behind, or nearly opposite, the first dorsal; all of the fin spines flexible; body less robust, approaching that of ATHERINA in form; head formed as in ATHERINA.

k^1. Teeth strong, present on jaws, vomer, palatines, and tongue; spines of dorsal, particularly the first, produced. *Australia.*
11. ATHERINOSOMA.

k^2. Teeth rather small, so far as known restricted to the jaws.

l^1. Lower jaw projecting; second spine of spinous dorsal produced, especially in the male; anal fin short, falcate. *Fresh and brackish waters of Australia, New Guinea, and neighboring islands.*
12. PSEUDOMUGIL.

l^2. Lower jaw included; first spine of spinous dorsal produced; anal fin of moderate length, rounded. *Fresh waters of Celebes.*

3. Telmatherina.

c^2. Dorsal fins widely separated, the height of the first being less than the distance between the origins of the two fins; body slender, often not strongly compressed; vertebræ more numerous, so far as described 37 to 56. *Coasts of all tropical and temperate regions, a few genera confined to fresh waters.*

m^1. Atherininæ: Premaxillaries not dilated posteriorly, usually slender throughout; gape straight, little restricted at corner of mouth by membrane between jaws (Atheriscus *excepted*); anus located far in advance of its normal position immediately before anal fin (scarcely advanced in Atherion and Iso); belly rather long; ventral fins less posterior in position, their insertions nearer to upper angle of pectoral base than to origin of anal fin; anal fin usually short. *West Indies eastward to the South Sea Islands.*

n^1. Head scaled on sides and top, trunk wholly scaled; body not sharply compressed; belly without a fleshy keel; head not abruptly truncated posteriorly; gill-slits wide; anal fin with 6 to 18 soft rays.

o^1. Anus scarcely advanced in position; rows of sharp tooth-like spines present on head; gill-rakers slender, in moderate number; mouth small, the maxillary not reaching to below eye; rami of mandibles elevated within the mouth. *Shores of the western Pacific.*

14. Atherion.

o^2. Anus notably advanced in position; no spines on head.

q^1. Gill-rakers slender and numerous (16 to 28 on lower limb of outer arch); mouth larger, the maxillary usually reaching to or beyond front of eye; teeth moderately fine in jaws, seldom lacking on vomer.

r^1. Rami of mandibles not at all or very slightly elevated within the mouth, the upper edge being straight or nearly so; premaxillary processes short and blunt, one-fourth to about one-half as long as the eye; head large and broad; the eye large; the body moderately robust; scales rather large, in 32 to 45 series. *West Indies to the South Sea Islands (more nearly restricted to the Tropics than is* Atherina*).*

15. Hepsetia.

r^2. Rami of mandibles elevated within the mouth, the upper edge being sharply curved upward posteriorly; premaxillary processes relatively long and slender, about one-half to quite as long as eye; head usually shorter and narrower, and the eye smaller, than in Hepsetia; the body usually more slender; scales moderate or small, in 40 to 75 series. *West Indies to southern Europe and the South Sea Islands.*

16. Atherina.

q^2. Gill-rakers rudimentary, 10 or 12 on lower limb of outer arch; mouth smaller, the maxillary not reaching to front of eye; teeth microscopic in jaws, none on palate; rami of mandibles elevated within the mouth; scales very large, in 25 to 35 series. *Fresh waters of Australia.*

17. (18) Craterocephalus.

n^3. Head and adjacent part of trunk naked; body sharply compressed; belly with a fleshy keel; head abruptly truncated posteriorly; the gill-slits behind the first much restricted; anal fin with about 23 soft rays. *Surf along shores of western Pacific and Australia*........................19. Iso.

m^2. ATHERINOPSINÆ: Premaxillaries broadly dilated posteriorly (not greatly dilated in LABIDESTHES and XENATHERINA); gape strongly curved, restricted at corners of mouth by membrane between jaws (except in XENATHERINA); anus normal in position (except in ARCHOMENIDIA); belly short; ventral fins more posterior in position, their insertions being farther from the upper angle of the pectoral base than from the origin of the anal fin, or about midway between these two points; anal fin usually elongate, with from 13 to 29 soft rays. *Shores and streams of the New World.*

s^1. Premaxillaries fully protractile, the skin covering them separated by a deep fold from that of the forehead.

t^1. Sides of head and all of trunk scaled.

u^1. Jaws not produced into a beak; premaxillaries very widely dilated posteriorly; origin of first dorsal behind that of anal only in large-scaled genera.

v^1. Jaws equal, or the lower included at its tip.

w^1. Teeth well developed, in both jaws.

x^1. Scales large, in 36 to 56 series; pectorals reaching to or beyond vertical from insertion of ventrals; small fishes. *Tropical waters of the New World, ranging northward to Nova Scotia and the Gulf of California, southward to Rio de Janeiro and Ecuador.*

y^1. Head not abruptly truncated posteriorly; preopercular ridge without a spine; interorbital flat, or nearly so.

z^1. First dorsal fin beginning before or over origin of anal fin; pectoral fin usually not falcate, and usually shorter than the head; belly rounded transversely; body usually with evenly curved contours; rami of mandibles usually much elevated posteriorly.

aa^1. Scale margins strictly entire, or very slightly crenulate; mandible little oblique, the head not being notably angulated at its base; mouth larger, the maxillary reaching nearly to below front of eye, the length of the mandible before corner of gape being notably greater than that of the pupil; jaws equal.

bb^1. Anus normal in position; air bladder not extended backward over anal base; gape less strongly arched; teeth of jaws in bands, those of the outer premaxillary series not enlarged, directed downward. *Nova Scotia to Louisiana; Gulf of California.*

20. MENIDIA.

Anal fin short, with 15 to 19 soft rays. *Coast and coastwise streams of eastern United States.*

Subgenus ISCHNOMEMBRAS.

Anal fin longer, with 20 to 29 soft rays. *Nova Scotia to Louisiana; Gulf of California.*

Subgenus MENIDIA.

bb^2. Anus advanced in position, as in ATHERINA; air bladder extended backward to beyond middle of anal base; gape very strongly arched; teeth of jaws in two series, those of the outer premaxillary series enlarged and directed forward more than downward. *Streams of east central Mexico.*
21. ARCHOMENIDIA.

aa^2. Scale margins strongly crenate or roughly laciniate; mandible oblique, the outline of head angulated at its base; mouth very small, the maxillary not nearly reaching to below front of eye, and the length of mandible before corner of gape being only about as long as the pupil; lower jaw included; air bladder not extended into urosome.

cc^1. Head not compressed, its width being equal to its depth; body more nearly terete, the belly very broadly rounded; base of spinous dorsal in front of vertical from origin of anal; dorsal and anal fins wholly naked, the scales of the body fitting tightly against the base of the rays; scales thinner, with well developed apical radii, scale margins crenulate or more evenly laciniate. *Tropical Pacific.*
22. HUBBESIA.

cc^2. Head and body strongly compressed; base of spinous dorsal entirely or in part over front of anal; dorsal and anal fins with a sheath of large deciduous scales; scales thicker, with the apical radii obsolete, and the margins coarsely and irregularly laciniate. *Tropical Atlantic, north to New York* ....23. MEMBRAS.

z^2. First dorsal fin beginning notably behind origin of anal; pectoral fin falcate, usually longer than the head; belly more or less sharply compressed, as though pinched between thumb and finger; body of peculiar form, the anterodorsal and posteroventral, and the posterodorsal and anteroventral contours, respectively, being nearly parallel; air bladder broadly extended backward into tail over first fourth or third of anal base; mandible oblique, the outline of the head angulated at its base.

dd^1. Scale margins entire, or in part weakly and coarsely crenate, the apical circuli obsolete; belly shortened, the origin of the anal fin being nearer to the head than to the base of caudal; end of second dorsal a little in advance of that of anal; rami of mandibles little elevated posteriorly (except in T. SARDINA). *Western Mexico and Central America to Colombia and Brazil* ....24. THYRINA.

dd^2. Scale margins all finely laciniate, produced outward between the ends of the well developed apical radii; origin of anal fin midway between head and base of caudal; end of second dorsal over that of anal; rami of mandibles elevated posteriorly. *Shores of tropical Pacific* ....25. THYRINOPS.

dd^2. Scale margins all sharply and strongly dentate; apical radii obsolete; belly longer, the origin of the anal fin being nearer caudal base than head; end of short second dorsal well behind that of anal; rami of mandibles highly elevated posteriorly; the ventral compression of the body carried to the extreme, the belly forming a keel both before and behind ventrals. *Shores of the tropical Pacific*..............26. ATHERINELLA.

y^2. Head truncated posteriorly, the opercle short; preopercular ridge with a weak flat spine at angle; interorbital convex; head and body sharply compressed, especially ventrally; rami of mandibles scarcely elevated posteriorly; silvery lateral band very wide. *Shores of the tropical Pacific.*
27. EURYSTOLE.

x^2. Scales of small or moderate size, in 48 to 105 series; pectoral fins usually not reaching to vertical from insertion of ventral; fishes of larger size. *Temperate waters of South America, ranging northward to southeastern Brasil and to Peru.*

ee^1. Body of the form, and with the sharply compressed belly, of THYRINA; scales in 53 series, their margins laciniate; teeth lacking on vomer, in two series on jaws; first dorsal anterior to anal; pectorals reaching to vertical from insertion of ventrals. *Southeastern Brasil in fresh water.*
28. PSEUDOTHYRINA.

ee^2. Body of the form, and with the rounded belly, of MENIDIA; pectorals not reaching to ventrals.

ff^1. Scale margins sublaciniate; teeth well developed on the vomer, in bands on jaws; first dorsal inserted over anus. *Southeastern Brasil, in fresh water.*
29. KRONIA.

ff^2. Scale margins entire, so far as known.

gg^1. Head pike-like, sharply pointed; belly greatly lengthened, the dorsal and anal fins located posteriorly; first dorsal base over origin of anal; teeth well developed on vomer; scales in about 50 to 70 series. *Argentina*..................................30. ODONTESTHES.

gg^2. Head formed as in MENIDIA; belly less lengthened, the dorsal and anal fins less posterior; first dorsal base over interspace between insertion of ventral and origin of anal; teeth usually lacking on vomer; scales usually finer. *Shores and streams of Argentina, Peru, and Chile*.....................31. AUSTROMENIDIA.

w^2. Teeth obsolete, or microscopic and deciduous; scales small, in about 70 series, their margins serrulate; lower jaw deep at base; first dorsal fin over front of anal. *Shores of California and the outer coast of Lower California*..............33. LEURESTHES

v^2. Jaws unequal, the lower more or less projecting (except in C. PROMELAS, in which the premaxillaries are secondarily produced forward); rami of mandibles more or less elevated posteriorly; scales large or moderately fine in 37 to about 75 series, their margins entire or crenate; first dorsal fin beginning over or before orgin of anal; a conical diverticulum of the air bladder extended backward over one-third to two-thirds of the anal base. *Lakes and streams of the Rio Lerma System and lakes of Mexico*..........32. CHIROSTOMA.

u^2. Jaws produced into a short rounded beak; premaxillaries dilated, but proportionately less widely than in the preceding genera of the subfamily; origin of first dorsal behind that of anal; scales small, in about 75 series, their margins entire; air bladder extended backward a short distance into tail; rami of mandibles scarcely elevated posteriorly, nearly linear in form. *Fresh waters of eastern United States*..........34. LABIDESTHES.

t^2. Scales lacking on head and most of trunk; jaws pointed anteriorly, the premaxillaries rather narrowly dilated posteriorly; gape wide, not restricted by membrane between jaws; rami of mandibles sublinear; belly short; anus in normal position; air bladder broadly extended backward into tail over front of anal base; first dorsal base behind origin of anal; scales of moderate size, their margins more or less evidently crenate. *Streams of east central Mexico.*
35. XENATHERINA.

s^2. Premaxillaries not technically protractile, the skin above continuous with that of the forehead; a cross furrow at base of premaxillary processes permitting a degree of motion; rami of mandibles elevated posteriorly; scales moderately small or fine; size rather large, comparatively. *Shores and streams of the Pacific slope of America.*

hh^1. Scales on top of head not reversed in imbrication, those of the body larger, in 47 to about 80 series; vomer without teeth; anal fin long, with 17 to 24, usually 20 to 23, soft rays; spinous dorsal well developed. *Western shores of North America.*

ii^1. Teeth of jaws simple, conic, in bands; first dorsal of seven to nine spines. *Shores of California, and the outer coast of Lower California*..........36. ATHERINOPSIS.

ii^2. Teeth of jaws forked, uniserial; first dorsal of four to seven spines. *Oregon to the Gulf of California.*

jj^1. Head slightly depressed; gill-rakers 16 to 18 on lower limb of outer arch, strongly compressed, curved, serrate on inner margins, about one-fourth as long as eye; inner fork of teeth usually much the shorter. *Gulf of California.*
37. COLPICHTHYS.

jj^2. Head compressed; gill-rakers 20 to 25 on lower limb of outer arch, slender, terete, straight, nearly smooth, about two-fifths as long as eye; inner fork of teeth usually little the shorter. *Outer coast of Lower California, California and Oregon.*
38. ATHERINOPS.

hh^2. Scales on top of head reversed in imbrication, those of the body smaller, in about 75 to 100 series; vomer with teeth; anal fin shorter, with 13 to 16 soft rays. *Western shores and coastwise streams of South America.*

kk[1]. First dorsal fin reduced in size and composed of one to six spines, occasionally altogether wanting; scales 75 to 80. *Andean streams (and shores?) of the Pacific slope of Peru and Chile.*
39. BASILICHTHYS.

ANNOTATED LIST OF THE GENERA AND SPECIES OF ATHERINE FISHES

On the following pages we list the genera of the ATHERINIDÆ, with notes and descriptions, in the order in which we have differentiated them in the foregoing key. Under the head of each genus we list all of the species which we recognize, with synonomy, and frequently with notes and descriptions. The species examined by us in the preparation of this report are marked $^{St.}$. The accompanying plates are nearly all electrotypes from those accompanying the original description. For most of these we are indebted to the kindly aid of Dr. Marcus Benjamin, editor of the *Proceedings of the United States National Museum.* The electrotypes of the species described by Dr. Seth E. Meek are loaned by the Field Museum.

Subfamily NANNATHERININÆ

I. NANNATHERINA Regan, 1906.

NANNATHERINA Regan, *Ann. Mag. Nat. Hist.* (7), **18**, 451, 1906.
Orthotype.—NANNATHERINA BALSTONI Regan.
Range.—Western Australia, in fresh water.

The characters and relationships of this peculiarly perch-like type have already been discussed (pp. 8, 9). According to Regan, "the vertebral column and pectoral arch are as in typical ATHERINIDÆ; the pelvic bones are quite remote from the clavicles, to which they are connected by ligament."

The possibility of real relationship of NANNATHERINA with NANNOPERCA, another fresh-water fish of Australia, is suggested by the external features of the two types. NANNOPERCA is currently regarded as related to KUHLIA. It is possible that NANNATHERINA should be regarded as the type of a distinct family.

1. Nannatherina balstoni Regan, 1906.

NANNATHERINA BALSTONI Regan, *Ann. Mag. Nat. Hist.*, (7), **18**, 451, 1906.
Type-locality.—King River, Western Australia.
Range.—King River, Western Australia.

Subfamily BEDOTIINÆ.

II. BEDOTIA Regan, 1903.

BEDOTIA Regan, *Rev. Suisse Zool.*, **11**, 416, 1903.
Orthotype.—BEDOTIA MADAGASCARENSIS Regan.
Range.—Fresh waters of Madagascar.

A highly aberrant genus, with three known species.

2. **Bedotia madagascarensis** Regan, 1903.

BEDOTIA MADAGASCARENSIS Regan, *Rev. Suisse Zool.*, **11**, 416, pl. 14, fig. 2, 1903. BOULENGER, *Catalogue Fresh-water Fishes Africa*, **4**, 76, 1916.

Type-locality.—Fresh waters of Madagascar.

Range.—Fresh waters of Madagascar.

3. **Bedotia longianalis** Pellegrin, 1914.

BEDOTIA LONGIANALIS Pellegrin, *Bull. Soc. Zool. France*, **39**, 178, 1914.

Type-locality.—Mahambo, on the east coast of Madagascar.

Range.—Madagascar, probably in fresh or brackish water.

4. **Bedotia geayi** Pellegrin, 1907.

BEDOTIA GEAYI Pellegrin, *Bull. Mus. Hist. Nat. Paris*, **13**, 205, 1907; *Bull Soc. Nat. Ac. France*, **55**, 55, 1908.

Type-locality.—A tributary of the Bas-Mananjary, Madagascar.

Range.—Fresh waters of Madagascar.

Subfamily RHEOCLINÆ.

III. **RHEOCLES** Jordan and Hubbs, 1919.

RHEOCLES Jordan and Hubbs, *Proc. Acad. Nat. Sci. Phila.*, 1919, 343.

Orthotype.—ELEOTRIS SIKORÆ Sauvage.

Range.—Fresh waters of Madagascar.

Dorsal fins closely approximated, the spines of the first dorsal all flexible, none produced as filaments; anal fin of moderate length, composed of one spine and 14 to 16 soft rays; pectoral fins high, the ventrals not far behind them; caudal emarginate. Premaxillaries protractile, without an anterolateral notch; fewer than 12 conical gill-rakers on lower limb of first arch.

This well-marked genus bears considerable resemblance to BEDOTIA of the same region, and to the MELANOTÆNIINÆ of the Australian fauna.

5. **Rheocles sikoræ** (Sauvage), 1891.

ELEOTRIS SIKORÆ Sauvage, *Hist. Madag., Poiss.*, 521, pl. 44 C, fig. 2, 1891.

ATHERINA SIKORÆ Boulenger, *Zool. Rec.*, 20, 1891; *Catalogue Fresh-water Fishes Africa*, **4**, 76, 1916.

Type-locality.—Streams of the eastern slope of the central range of Madagascar.

Range.—Fresh waters of eastern Madagascar.

6. **Rheocles alaotrensis** (Pellegrin), 1914.

ATHERINA ALAOTRENSIS Pellegrin, *Bull. Soc. Zool. France*, **39**, 46, 1914; Boulenger, *Catalogue Fresh-water Fishes Africa*, **4**, 76, 1916.

Type-locality.—Lake Alaotra, Madagascar.

Range.—Lake Alaotra, in eastern Madagascar.

ATHERINA ALAOTRENSIS Pellegrin is apparently congeneric with ELEOTRIS SIKORÆ Sauvage, but it has a smaller mouth, fewer dorsal rays, and is described as having the belly naked behind the ventrals, whereas this region is figured as scaled in SIKORÆ.

Subfamily MELANOTÆNIINÆ.

PSEUDOMUGILIDÆ Kner, *Reise Novara, Fische*, 275, 1865; Kner and Steindachner, *Sitzb. Akad. Wiss. Wien*, **44**, 372, 1866.

ZANTECLIDÆ Castelnau, *Proc. Zool. Soc. Victoria*, **2**, 88, 1873.

NEOATHERINIDÆ Castelnau, *Researches Fishes, Australia*, 31, 1875.

MELANOTÆNIINÆ Gill, *Am. Nat.*, 708, 1894; Weber, *Nova Guinea*, 230, 1908.

MELANOTÆNIIDÆ Ogilby, *Proc. Linn. Soc. N. S. Wales*, **21**, 120, 1896.

We adopt the name MELANOTÆNIINÆ for this group, for the following reasons: ZANTECLA and NEOATHERINA are regarded as identical with MELANOTÆNIA. The name PSEUDOMUGILIDÆ was not defined and had not been used in the subpatronymic form, and PSEUDOMUGIL, furthermore, is not typical of the group as a whole. In fact Regan has urged that PSEUDOMUGIL be removed from the MELANOTÆNIA group, suggesting that its relationships are rather with TELMATHERINA. As both of these genera, however, have more in common with the typical MELANOTÆNIINÆ than with other groups of the ATHERINIDÆ, we place them in that subfamily.

We include in the MELANOTÆNIINÆ nine genera from the warmer parts of Australia, and from New Guinea and neighboring islands, with one genus (TELMATHERINA) from Celebes. All, or at least most of them, live exclusively in fresh waters. Most of the genera agree in having a strong pungent spine at the front of both dorsals, and at the front of the anal fin, which is usually elongate, and begins in advance of the first dorsal. In MELANOTÆNIA and RHOMBOSOMA the anal sometimes begins definitely behind the front of the first dorsal, as also in ATHERINOSOMA, PSEUDOMUGIL, and TELMATHERINA, genera in which the anal is rather short or moderately elongate. In these three genera, as well as in RHADINOCENTRUS among the more typical MELANOTÆNIINÆ, all of the fin spines are flexible. In CENTRATHERINA all of the dorsal spines are pungent In all of the other genera, one, two, or all of the dorsal spines are filamentous, especially in the male. Sexual dimorphism in the ATHERINIDÆ appears to be restricted to the MELANOTÆNIINÆ.

IV. CENTRATHERINA Regan, 1914.

CENTRATHERINA Regan, *Trans. Zool. Soc. London*, **20**, 283, 1914.
Orthotype.—RHOMBATRACTUS CRASSISPINOSUS Weber.
Range.—Fresh waters of northern New Guinea.

Mr. Regan (*l. c.*, p. 278) has assumed that the spines have become secondarily pungent in this genus. It seems more plausible to us, however, that they are all primitively robust, as in the perch-like genus NANNATHERINA and in NANNOPERCA.

7. **Centratherina crassispinosa** (Weber), 1913.

RHOMBATRACTUS CRASSISPINOSUS Weber, *Nova Guinea*, **9**, 567, 1913.
CENTRATHERINA CRASSISPINOSA Regan, *Trans. Zool. Soc. London*, **20**, 283, pl. 31, fig. 2, 1914.
Type-locality.—Northern New Guinea: "Unterlauf, Oberlauf und Nebenfluss Buarin des Sermowai-Flusses bei der Walckenaer-Bucht."
Range.—Fresh waters of northern New Guinea.

V. CHILATHERINA Regan, 1914.

CHILATHERINA Regan, *Trans. Zool. Soc. London*, **20**, 282, 1914.
Logotype (now definitely designated).—RHOMBATRACTUS FASCIATUS Weber.
Range.—Fresh waters of northern New Guinea.

8. **Chilatherina fasciata** (Weber), 1913.

RHOMBATRACTUS FASCIATUS Weber, *Nova Guinea*, **9**, 565, 1913.
CHILATHERINA FASCIATUS Regan, *Trans. Zool. Soc. London*, **20**, 282, pl. 31, fig. 4, 1914.
Type-locality.—Mouth of the Sermowai River, New Guinea.
Range.—Streams of northern New Guinea.

9. **Chilatherina sentaniensis** (Weber), 1908.

RHOMBATRACTUS SENTANIENSIS Weber, *Nova Guinea*, **5**, 235, pl. 11, fig. 3, 1908; **9**, 564, 1913.
CHILATHERINA SENTANIENSIS Regan, *Trans. Zool. Soc. London*, **20**, 282, 1914.
Type-locality.—Lake Sentani, New Guinea.
Range.—Lake Sentani, northern New Guinea.

VI. ANISOCENTRUS Regan, 1914.

ANISOCENTRUS Regan, *Trans. Zool. Soc. London*, **20**, 281, 1914.
Orthotype.—NEMATOCENTRIS RUBROSTRIATUS Ramsay and Ogilby.
Range.—Southern New Guinea and Aru Islands, in fresh water.

10. **Anisocentrus rubrostriatus** (Ramsay and Ogilby), 1867.

NEMATOCENTRIS RUBROSTRIATUS Ramsay and Ogilby, *Proc. Linn. Soc. N. S. Wales* (21), **1**, 14, 1886 (1887); Regan, *Proc. Zool. Soc. London*, 339, 1914.
RHOMBATRACTUS RUBROSTRIATUS Ogilby, *Proc. Linn. Soc. N. S. Wales*, **21**, 134, 1896.
ANISOCENTRUS RUBROSTRIATUS Regan, *Trans. Zool. Soc. London*, **20**, 281, pl. 31, fig. 3, 1914.
Type-locality.—Strickland River, New Guinea.
MELANOTÆNIA DUMASI Weber, *Nova Guinea*, **5**, 240, pl. 11, fig. 1, 1908; **9**, 558, 1913.
Type-locality.—River Wa Udu, basin of the Urama, southern New Guinea.
Range.—Streams of southern New Guinea and Aru Islands.

VII. RHOMBOSOMA Regan, 1914.

RHOMBOSOMA Regan, *Trans. Zool. Soc. London*, **20**, 283, 1914.
Orthotype.—NEMATOCENTRIS NOVÆ-GUINEÆ Ramsay and Ogilby.
Range.—Fresh and brackish waters of New Guinea and neighboring islands.

This genus, as well as others proposed by Regan at the same time, is very closely related to MELANOTÆNIA, differing from that genus in details of mouth structure and dentition. It may be found convenient to reunite some of these groups with MELANOTÆNIA. We retain them all, however, awaiting the fresh evidence of newly described or rediscovered species.

Mr. Regan recognized but two species of RHOMBOSOMA after examining a large series of specimens, including paratypes of most of the nominal species.

11. Rhombosoma goldiei (Macleay), 1884.

ARISTEUS GOLDIEI Macleay, *Proc. Linn. Soc. N. S. Wales*, **8**, 269, 1883 (1884); Perugia, *Ann. Mus. Genova*, **34**, 548, 1894.
RHOMBATRACTUS GOLDIEI Ogilby, *Proc. Linn. Soc. N. S. Wales*, **21**, 134, 1896.
RHOMBOSOMA GOLDIEI Regan, *Proc. Zool. Soc. London*, 339, figs. 1–2, 1914.
Type-locality.—Goldie River, New Guinea.
NEMATOCENTRIS NOVÆ-GUINEÆ Ramsay and Ogilby, *Proc. Linn. Soc. N. S. Wales* (2) **1**, 13, 1886 (1887).
RHOMBATRACTUS NOVÆ-GUINEÆ Ogilby, *Proc. Linn. Soc. N. S. Wales*, **21**, 134, 1896.
RHOMBOSOMA NOVÆ-GUINEÆ Regan, *Trans. Zool. Soc. London*, **20**, 283, pl. 31, figs. 5–6, 1914; *Proc. Zool. Soc. London*, 339, 1914.
Type-locality.—Strickland River, New Guinea.
RHOMBATRACTUS AFFINIS Weber, Nova Guinea, **5**, 234, pl. 11, fig. 5, 1908; **9**, 565, 1913; Regan, *Trans. Zool. Soc. London*, **20**, 284, 1914.
Type-locality.—New Guinea: "Timena, Bach der in den Sentani-See mündet; Süsswasser."
RHOMBATRACTUS KOCHII Weber, *Nova Guinea*, **5**, 237, pl. 11, fig. 6, 1908; **9**, 562, 1913; Regan, *Trans. Zool. Soc. London*, **20**, 284, 1914.
Type-locality.—Southern New Guinea: "Wasserläufe, die in die Münding des Merauke-Flusses ausmünden; vermutlich Brackwasser."
RHOMBATRACTUS WEBERI Regan, *Ann. Mag. Nat. Hist.* (8), **1**, 155, 1908; *Trans. Zool. Soc. London*, **20**, 284, 1914.
Type-locality.—Fly River, New Guinea.
RHOMBATRACTUS CATHERINÆ De Beaufort, *Zool. Anz.*, **36**, 250, 1910; *Bijd. Dierk. Amsterdam*, 106, pl. 2, fig. 1, 1913; Regan, *Trans. Zool. Soc. London*, **20**, 284, 1914.
Type-locality.—Brook flowing into the Rabiai River, Waigiou.
RHOMBATRACTUS SENCKENBERGIANUS Weber, *Abh. Senckenb. Nat. Ges.*, **34**, 25, pl. 1, fig. 2, 1911; Regan, *Trans. Zool. Soc. London*, **20**, 284, 1914.
Type-locality.—Terangan Island, Aru Islands; in fresh water.
Range.—Fresh and brackish waters of New Guinea, the Aru Islands, and Waigiou.

12. Rhombosoma lorentzii (Weber), 1908.

Rhombatractus lorentzii Weber, *Nova Guinea*, **5**, 236, pl. 11, fig. 2, 1908; **9**, 564, 1913.

Rhombosoma lorentzii Regan, *Trans. Zool. Soc. London*, **20**, 284, 1914.

Type-locality.—Tawarin River, northern New Guinea.

Range.—Fresh waters of northern New Guinea.

In respect to the length of the anal fin, this species is the most aberrant of the Melanotæniinæ.

VIII. MELANOTÆNIA Gill, 1862.

Melanotænia Gill, *Proc. Acad. Nat. Sci. Phila.*, 280, 1862; Ogilby, *Proc. Linn. Soc. N. S. Wales*, **21**, 130, 1896; Weber, *Nova Guinea*, **5**, 238, 1908; Regan, *Trans. Zool. Soc. London*, **20**, 270, 1914.

Orthotype.—Atherina nigrans Richardson.

Strabo Kner and Steindachner, *Sitzb. Akad. Wiss. Wien*, **44**, 372, 1866.

Orthotype.—Strabo nigrofasciatus Kner and Steindachner.

Nematocentris Peters, *Monatsb. Akad. Wiss. Berlin*, 516, 1866 (1867).

Haplotype.—Nematocentris splendida Peters.

Zantecla Castelnau, *Proc. Zool. Soc. Victoria*, **2**, 88, 1873.

Orthotype.—Zantecla pusilla Castelnau.

Aida Castelnau, *Researches Fishes Australia*, 10, 1875; Ogilby, *Proc. Linn. Soc. N. S. Wales*, **21**, 128, 1896.

Orthotype.—Aida inornata Castelnau.

Neoatherina Castelnau, *Researches Fishes Australia*, 31, 1875; Macleay, *Proc. Linn. Soc. N. S. Wales*, **6**, 46, 1881 (1882); Ogilby, *ibid.*, **21**, 121, 1896.

Orthotype.—Neoatherina australis Castelnau.

Aristeus Castelnau, *Proc. Linn. Soc. N. S. Wales*, **3**, 141, 1878 (1879).

Orthotype.—Aristeus fitzroyensis Castelnau.

Rhombatractus Gill, *Amer. Nat.*, 709, 1894; Ogilby, *Proc. Linn. Soc. N. S. Wales*, **21**, 124, 1896 (substitute for Aristeus preoccupied).

Orthotype.—Aristeus fitzroyensis Castelnau.

Range.—Warmer parts of Australia, New Guinea, and the neighboring islands; in fresh and brackish water, and (in the opinion of Mr. Regan) probably also in the sea.

According to Mr. Regan, the many nominal Australian species of the Melanotæniinæ, for which eight generic names have been proposed, are all reducible to one, Melanotænia nigrans (Richardson). Regarding this situation Mr. Allan R. McCulloch remarks (*in lit.*): "Surprising as Regan's treatment of our Melanotæniinæ was, it harmonized with my own ideas on the subject very well. Our climatic conditions and intercalating river systems are peculiarly uniform, and we are finding that the fishes inhabiting them may extend over a very wide portion of the continent, varying greatly, but not so that they can be conveniently subdivided into geographical species or even subspecies."

Not having sufficient material with which to determine whether any of the numerous synonyms ascribed by Regan to MELANOTÆNIA NIGRANS might be valid species, we follow his decisions. To the synonyms which he adopted, we add ATHERINICHTHYS DUBOULAYI Castelnau, and RHOMBATRACTUS MACCULLOCHI Ogilby.

13. Melanotænia nigrans (Richardson), 1943.St.

ATHERINA NIGRANS Richardson, *Ann. Mag. Nat. Hist.*, **11**, 180, 1843.

ATHERINICHTHYS NIGRANS Günther, *Catalogue Fishes Brit. Mus.*, **3**, 406, 1861; *Ann. Mag. Nat. Hist.* (4), **17**, 396, 1876.

NEMATOCENTRIS NIGRA Günther, *Ann. Mag. Nat. Hist.* (3), **20**, 65, 1867.

NEMATOCENTRIS NIGRANS Macleay, *Proc. Linn. Soc. N. S. Wales*, **6**, 44, 1881 (1882).

MELANOTÆNIA NIGRANS Ogilby, *Proc. Linn. Soc. N. S. Wales*, **21**, 131, 1896; Regan, *Trans. Zool. Soc. London*, **20**, 279, 1914.

Type-locality.—King's River, near Victoria, Australia.

STRABO NIGROFASCIATUS Kner and Steindachner, *Sitzb. Akad. Wiss. Wien*, **44**, 373, 395, pl. 3, fig. 10; **45**, 16, 1867.

MELANOTÆNIA NIGROFASCIATA Ogilby, *Proc. Linn. Soc. N. S. Wales*, **21**, 135, 1896.

Type-locality.—Brisbane, Australia.

NEMATOCENTRIS SPLENDIDA Peters, *Monatsb. Akad. Wiss. Berlin*, 516, 1866 (1867).

MELANOTÆNIA SPLENDIDA Ogilby, *Proc. Linn. Soc. N. S. Wales*, **21**, 134, 1896.

Type-locality.—Fitzroy River, Queensland.

ZANTECLA PUSILLA Castelnau, *Proc. Zool. Soc. Victoria*, **2**, 88, 1873; Macleay, *Proc. Linn. Soc. N. S. Wales*, **6**, 44, 1881 (1882).

MELANOTÆNIA PUSILLA Ogilby, *Proc. Linn. Soc. N. S. Wales*, **21**, 135, 1896.

Type-locality.—Port Darwin, North Australia.

AIDA INORNATA Castelnau, *Researches Fishes Australia*, 10, 1875; Macleay, *Proc. Linn. Soc. N. S. Wales*, **5**, 349, 1880 (1881); Ogilby, *ibid.*, **21**, 128, 1896.

Type-locality.—Gulf of Carpenteria, Australia.

NEOATHERINA AUSTRALIS Castelnau,[11] *Researches Fishes Australia*, 32, 1875; Macleay, *Proc. Linn. Soc. N. S. Wales*, **6**, 46, 1881 (1882); Ogilby, *ibid.*, **21**, 122, 1896; Zietz, *Proc. Roy. Soc. S. Austral.*, **33**, 264, 1909.

Type-locality.—Swan River, Western Australia.

ARISTEUS FITZROYENSIS Castelnau, *Proc. Linn. Soc. N. S. Wales*, **3**, 141, 1878 (1879); Macleay, *ibid.*, **5**, 625, 1881.

RHOMBATRACTUS FITZROYENSIS Ogilby, *Proc. Linn. Soc. N. S. Wales*, **21**, 125, 1896.

RHOMBATRACTUS FITZROYENSIS Cockerell, *Mem. Queensl. Mus.*, **3**, 38, 1915.

Type-locality.—Rockhampton, Fitzroy River, Queensland.

ARISTEUS FLUVIATILIS Castelnau, *Proc. Linn. Soc. N. S. Wales*, **3**, 141, 1878 (1879); Macleay, *ibid.*, **5**, 625, 1881.

RHOMBATRACTUS FLUVIATILIS Ogilby, *Proc. Linn. Soc. N. S. Wales*, **21**, 125, 1896.

Type-locality.—Murrumbridgee River, New South Wales (so fixed by Ogilby).

ATHERINICHTHYS DUBOULAYI Castelnau, *Proc. Linn. Soc. N. S. Wales*, **3**, 143, 1878 (1879).

---

[11] Only the notoriously inaccurate character of Castelnau's descriptions justifies one in including NEOATHERINA AUSTRALIS in synonymy of MELANOTÆNIA NIGRANS.

CHIROSTOMA DUBOULAYI Waite, *Mem. N. S. Wales Nat. Club,* **2,** 21, 1904.

Type-locality.—Lagoon of fresh water connected with the Richmond River, Australia.

ARISTEUS RUFESCENS Macleay, *Proc. Linn. Soc. N. S. Wales,* **5,** 625, 1881.

RHOMBATRACTUS RUFESCENS Ogilby, *Proc. Linn. Soc. N. S. Wales,* **21,** 133, 1896.

Type-locality.—Rivers of northern Queensland.

ARISTEUS LINEATUS Macleay, *Proc. Linn. Soc. N. S. Wales,* **5,** 626, 1881.

RHOMBATRACTUS LINEATUS Ogilby, *Proc. Linn. Soc. N. S. Wales,* **21,** 133, 1896.

Type-locality.—Richmond River, New South Wales.

ARISTEUS CAVIFRONS Macleay, *Proc. Linn. Soc. N. S. Wales,* **7,** 70, 1882 (1883).

RHOMBATRACTUS CAVIFRONS Ogilby, *Proc. Linn. Soc. N. S. Wales,* **21,** 133, 1896.

Type-locality.—Palmer River, in northern Queensland.

ARISTEUS PERPOROSUS De Vis, *Proc. Linn. Soc. N. S. Wales,* **9,** 694, 1884 (1885).

RHOMBATRACTUS PERPOROSUS Ogilby, *Proc. Linn. Soc. N. S. Wales,* **21,** 134, 1896.

Type-locality.—Maryborough, Australia.

ARISTEUS LORIÆ Perugia, *Ann. Mus. Genova,* **34,** 549, 1894.

RHOMBATRACTUS LORIÆ Ogilby, *Proc. Linn. Soc. N. S. Wales,* **21,** 134, 1896.

Type-locality.—Inawi, British New Guinea.

NEMATOCENTRIS TATEI Zietz, *Rept. Horn Sci. Exp. Centr. Austral.,* **6,** 178, fig. 2, 1896.

RHOMBATRACTUS TATEI Ogilby, *Proc. Linn. Soc. N. S. Wales,* **21,** 134, 189; Zietz, *Proc. Roy. Soc. S. Austral.,* **33,** 264, 1909.

Type-locality.—Horseshoe Bend, Finke River, Australia (now definitely restricted).

NEMATOCENTRIS WINNECKEI Zietz, *Rept. Horn Sci. Exp. Centr. Austral..* **2,** 179, fig. 3, 1896.

RHOMBATRACTUS WINNECKEI Ogilby, *Proc. Linn. Soc. N. S. Wales,* **21,** 134, 1896; Zietz, *Proc. Roy. Soc. S. Austral.,* **33,** 264, 1909.

Type-locality.—Near Horseshoe Bend, Finke River, Australia.

MELANOTÆNIA MACULATA Weber, *Nova Guinea,* **5,** 239, pl. 11, fig. 4 1908; **9,** 557, 1913.

Type-locality.—"Aus dem Mündungsgebiet des Meranke-Flusses, Süd-New Guinea; vermuthlich schwach brackisches Wasser."

MELANOTÆNIA OGILBYI Weber, *Notes Leyden Mus.,* **32,** 230, 1910; *Nova Guinea.* **9,** 560, fig. 28, 1913.

Type-locality.—Tümpel, Lorentz River, New Guinea.

RHOMBATRACTUS PATOTI Weber, *Abh. Senckenb. Nat. Ges.,* **34,** 26, pl. 1, fig. 3, 1911.

Type-locality.—Terangan.

RHOMBATRACTUS MACCULLOCHI (Ogilby) Cockerell, *Mem. Queensl. Mus.,* **3,** 38, 1915.

Type-locality.—Barron R., North Queensland.

MELANOTÆNIA MACCULLOCHI Ogilby, *Mem. Queensl. Mus.,* **3,** 118, pl. 29, fig. 1, 1915.

Range.—Warmer parts of Australia, New Guinea, and the neighboring islands; in fresh and brackish water, and perhaps in the sea.

IX. GLOSSOLEPIS Weber, 1907.

GLOSSOLEPIS Weber, *Nova Guinea,* **5,** 241, 1908; Regan, *Trans. Zool. Soc. London,* **20,** 281, 1914.

Orthotype.—GLOSSOLEPIS INCISUS Weber.

Range.—Fresh waters of northern New Guinea.

14. **Glossolepis incisus** Weber, 1908.

GLOSSOLEPIS INCISUS Weber, *Nova Guinea,* **5,** 241, pl. 11, fig. 7, 1908; **9,** 562, 1913; Regan, *Trans. Zool. Soc. London,* **20,** 281, 1914.

Type-locality.—Lake Sentani, northern New Guinea.

Range.—Lake Sentani, New Guinea.

X. RHADINOCENTRUS Regan.

RHADINOCENTRUS Regan, *Trans. Zool. Soc. London,* **20,** 280, 1914.

Orthotype.—RHADINOCENTRUS ORNATUS Regan.

Range.—Fresh waters of Queensland.

In the lack of pungent spines in the fins, and in other characters, the genus RHADINOCENTRUS approaches the three which follow, ATHERINOSOMA, PSEUDOMUGIL, and TELMATHERINA. This and related genera differ from these three in much the same manner that THYRINA differs from MENIDIA; the belly is shortened, the anal fin elongate, with the origin anterior.

15. **Rhadinocentrus ornatus** Regan, 1914.

RHADINOCENTRUS ORNATUS Regan, *Trans. Zool. Soc. London,* **20,** 280, pl. 31, fig. 1, 1914; Cockerell, *Mem. Queensl. Mus.,* **3,** 38, 1915; Ogilby, *Mem. Queensl. Mus.,* **6,** 99, 1918.

Type-locality.—A pond on Moreton Island, near Brisbane, Queensland.

Range.—Fresh waters of Moreton Island, Queensland.

XI. ATHERINOSOMA Castelnau, 1875.

ATHERINOSOMA Castelnau, *Researches Fishes Australia,* 138, 1875; Macleay, *Proc. Linn. Soc. N. S. Wales,* **6,** 45, 1881 (1882); **9,** 171, 1884 (1885).

Haplotype.—ATHERINOSOMA VORAX Castelnau.

Range.—Australia; probably confined to fresh water.

ATHERINOSOMA has teeth on the jaws and vomer, and according to the type description, there are also teeth, strong and hooked, on the palatine and tongue. The body is moderately elongate; the first dorsal inserted well forward, its spines filamentous; the anal short; the scales very large, as in PSEUDOMUGIL.

This genus is imperfectly known, but the discovery and description of a second species seem to indicate that the genus is valid and that its relationships are closest with PSEUDOMUGIL.

16. **Atherinosoma vorax** Castelnau, 1872.

ATHERINOSOMA VORAX, Castelnau, *Proc. Zool. Soc. Victoria,* **1,** 138, 1872; *Macleay, Proc. Linn. Soc. N. S. Wales,* **6,** 45, 1881 (1882).

Type-locality.—Cape Schanck, Australia.

Range.—Region of Cape Schanck, Australia; perhaps in fresh water.

17. Atherinosoma jamesonii Macleay, 1885.

ATHERINOSOMA JAMESONII Macleay, *Proc. Linn. Soc. N. S. Wales*, **9**, 171, 1884 (1885).
Type-locality.—Bremer River, a tributary of the Brisbane; fresh water.
Range.—Brisbane River basin, Australia.

XII. PSEUDOMUGIL Kner, 1865.

PSEUDOMUGIL Kner, *Reise Novara, Fische*, 275, 1865; Ogilby, *Proc. Linn. Soc. N. S. Wales*, **21**, 123, 1896.
Orthotype.—PSEUDOMUGIL SIGNIFER Kner.
Range.—Fresh and brackish waters of New Guinea, the Aru Islands, and of the warmer parts of Australia.

This genus includes perhaps the smallest of all the ATHERINIDÆ. The type is the dainty "Blue-eye," valued in the aquarium.

18. Pseudomugil signifer Kner, 1865.$^{St.}$

PSEUDOMUGIL SIGNIFER Kner, *Reise Novara, Fische*, 275, pl. 13, fig. 5, 1865; Ogilby, *Proc. Linn. Soc. N. S. Wales*, **21**, 123, 1896; **22**, 82, 1897; Stead, *Fishes of Australia*, 71, 1906.
Type-locality.—Sidney, Australia.
Range.—Fresh and brackish waters of eastern Australia.

Specimens of this species from George's River, New South Wales, were examined by the writers.

19. Pseudomugil signatus (Günther), 1867.

ATHERINA SIGNATA Günther, *Ann. Mag. Nat. Hist.* (3), **20**, 64, 1867; Macleay, *Proc. Linn. Soc. N. S. Wales*, **6**, 40, 1881 (1882).
Type-locality.—Cape York, Australia.
Range.—Cape York, Australia.

As described, this species appears to differ from P. SIGNIFER in having fewer dorsal rays, and in the filamentous production of all the unpaired fins and the ventrals, a character perhaps of the males. It has been considered identical with P. SIGNIFER.

20. Pseudomugil novæ-guineæ Weber, 1908.

PSEUDOMUGIL NOVÆ-GUINEÆ Weber, *Nova Guinea*, **5**, 232, pl. 13, fig. 5, 1908; *Abh. Senckenb. Nat. Ges.*, **34**, 25, 1911; *Nova Guinea*, **9**, 556, fig. 27, 1913.
Type-locality.—Fresh water of the Wagani River, Urama Basin, south coast of New Guinea.
Range.—Streams of southern New Guinea.

21. Pseudomugil gertrudei Weber, 1911.

PSEUDOMUGIL GERTRUDEI Weber, *Abh. Senckenb. Nat. Ges.*, **34**, 23, pl. 1, fig. 4, text figs. 2, 3, 1911.
Type-locality.—Fresh water at Ngaiguli, Terangan Island, Aru Islands.
Range.—Fresh waters of the Aru Islands.

XIII. TELMATHERINA Boulenger, 1897.

TELMATHERINA Boulenger, *Proc. Zool. Soc. London*, 428, 1897.
Orthotype.—TELMATHERINA CELEBENSIS Boulenger.
Range.—Fresh waters of Celebes.

The rather deep body, relatively few vertebræ (17 + 16) and the filamentous dorsal spines indicate a relationship of this genus with the MELANOTÆNIINÆ, especially PSEUDOMUGIL.

22. **Telmatherina celebensis** Boulenger, 1897.

TELMATHERINA CELEBENSIS Boulenger, *Proc. Zool. Soc. London*, 428, pl. 28, fig. 3, 1897; Weber, *Bijd. Dierk. Amsterdam*, 206, fig. 3, 1913.
Type-locality.—Lake Matanna, Celebes.
Range.—Lakes (Matanna, Towuti) of Celebes.

23. **Telmatherina abendanoni** Weber, 1913.

TELMATHERINA ABENDANONI Weber, *Bijd. Dierk. Amsterdam*, 208, fig. 6, 1913.
Type-locality.—Soroako, on Lake Matanna, Celebes.
Range.—Lake Matanna, Celebes.

Subfamily ATHERININÆ.

ATHERININA Günther, *Catalogue Fishes Brit. Mus.*, 3, 391, 1861 (in part).
ATHERININÆ Fowler, *Proc. Acad. Nat. Sci. Phila.*, 40, 727, 1904 (in part).

This group is defined in the key to the genera. It contains all the Old World marine atherines and a few species from tropical America, on the Atlantic side. Most of the species have been placed in a single genus, ATHERINA. From this we separate out a large group, HEPSETIA, with ATHERINA BOYERI as its type, and several smaller groups. Many of the Australian and South Pacific forms are in especial need of critical study, as regards both their generic and specific status.

XIV. ATHERION Jordan and Starks, 1901.

ATHERION Jordan and Starks, *Proc. U. S. Nat. Mus.*, 24, 203, 1901.
Orthotype.—ATHERION ELYMUS Jordan and Starks.
Range.—Shores of the western Pacific.

This genus comprises two small fishes, very aberrant, but obviously allied to ATHERINA.

24. **Atherion elymus** Jordan and Starks, 1901.St.

(Plate I, Fig. 1.)

ATHERION ELYMUS Jordan and Starks, *Proc. U. S. Nat. Mus.*, 24, 203, fig. 3, 1901.
Type-locality.—Tide-pools at Misaki, Sagami, Japan.
Range.—Shores of southern Japan.

25. Atherion maccullochi Jordan and Hubbs, 1919.St.

ATHERION MACCULLOCHI Jordan and Hubbs, new species.
Type-locality.—Lord Howe Island.
Range.—Lord Howe Island, east of Australia.

Holotype.—A specimen 49 mm. long to caudal base, from Lord Howe Island; received from Mr. Allan R. McCulloch. Two paratypes, 45 mm. long, from the type locality, are also at hand. All are deposited in the collections of Stanford University.

The ATHERION of Lord Howe Island is closely related to A. ELYMUS of Japan. It differs from that species principally in the somewhat smaller size of the scales.

Body slender and compressed; the depth, greatest through the pectoral fins, contained 6.4 times in total length to caudal; least depth of caudal peduncle about three-fourths length of head. Belly rather narrowly flattened transversely. Length of head, 4.4 (about 4.2 in paratypes); head formed as in A. ELYMUS, rounded anteriorly, convex in cross section dorsally; dorsal contour slightly depressed behind end of premaxillary processes; tip of premaxillaries slightly above horizontal passing through middle of eye. Mouth very oblique and small, the upper jaw not extending to below front of eye, its length 3.6; eye, 3; snout, 4. Rami of mandibles elevated within the mouth. Teeth of the jaws small, but less minute than in some species of ATHERINA, arranged in a single series, which is apparently followed near front of jaws by small teeth; fine teeth also evident on the vomer, behind which the roof of the mouth is lined with rows of fine, apparently edentulous, granulations. Gill-rakers slender, serrulate on inner edge, about half as long as eye, 3 + 13 in number. The head is partly covered with finely spinulose ridges, as in A. ELYMUS. The maxillary is covered with these fine spinules, and there are several series on the mandible; a series below eye; others covering the preopercular ridge, the lower surface of the preopercle below the ridge, and the exposed surface of the interopercle; a row of several series on superior orbital rim, and several series on the sides of the snout.

Scale rows, 47-7 (43-7 in A. ELYMUS), 20 to 22 from first dorsal to occiput (16 in A. ELYMUS); a few large scales on opercle, and a row on the suborbital. Scales from the sides of the body about twice as deep as long, with entire edges, and without circuli on the exposed field.

Fin-rays: dorsal, IV, 10 or 11; anal, I, 15 or 16 (I, 14 anal rays counted in the type and two paratypes of A. ELYMUS). Origin of spinous dorsal equidistant from base of caudal and middle of snout; length of first dorsal when depressed about 1.5 times the interspace between the depressed dorsals. Base of second dorsal extending from above the middle to a little behind the end, of the anal base, contained 1.6 times in the head; anal base also shorter than head. Insertion of ventrals equidistant from origin of anal and from hind part of eye, as in A. ELYMUS.

Coloration dark, blackish on middle of dorsal scales, on the bases of the vertical fins, on top of head behind middle of eyes, on the snout, on the sides of the lower jaw, and over the surface of the gill chamber. The dark lateral band, as broad as the snout is long, was probably overlaid with silvery in life, as in ATHERINA; it becomes narrow posteriorly, but dilated again at base of caudal. Dorsal and caudal fins dusky, the others clear.

XV. HEPSETIA Bonaparte, 1837.

HEPSETIA Bonaparte, *Fauna Italica,* fasc. 91, no pagination; Jordan, *Copeia,* 47, No. 32, 1916.

Orthotype.—ATHERINA BOYERI Risso.

ATHERINOMORUS Fowler, *Proc. Acad. Nat. Sci. Phila.,* 40, 730, 1904.

Orthotype.—ATHERINA LATICEPS Poey (= ATHERINA STIPES Müller and Troschel).

Range.—Shores of the tropical Atlantic from Florida southward; Mediterranean Sea; Red Sea; Indian Ocean; East Indies; southern Japan; Hawaiian Islands; Australia, Tasmania, and New Zealand.

This genus, which we separate from ATHERINA as currently recognized, was indicated as an unnamed group by Cuvier and Valenciennes, and named by Bonaparte and later by Fowler. Fowler was the first to note the taxonomic value of the shape of the lower jaw. In HEPSETIA, the rami of the mandibles are more slender in form than in ATHERINA; the upper edge straight, not abruptly elevated behind. In the various regions where they both occur, the two groups are usually distinguishable by means of a combination of other characters, a fact strongly indicating that the distinction of the groups is natural. None of the differential characters when considered alone, however, is very sharply defined. The species of the group we call HEPSETIA usually differ from those of typical ATHERINA in their shorter and blunter premaxillary spine, the shorter and more rounded snout, the larger eye, wider interorbital, longer head, deeper body, and larger scales.

26. Hepsetia boyeri (Risso), 1810.$^{St.}$

ATHERINA HEPSETUS, var. 3 Delaroche, *Ann. Mus. Hist. Nat. Paris,* 13, 357, 1809.

ATHERINA BOYERI Risso, *Ichth. Nice,* 338, pl. 10, fig. 38, 1810; Günther, *Catalogue Fishes Brit. Mus.,* 3, 394, 1861 (in part); Borsieri *Ann. Agricolt.,* 31, pl. 8, 1902 (1904).

ATHERINA BOIERI Cuvier and Valenciennes, *Hist. Nat. Poiss.,* 10, 432, pl. 303, 1835.

Type-locality.—Nice, France.

Range.—Mediterranean Sea.

Günther's description of this species applies much better to Atherina hepsetus. Some of his specimens apparently should have been referred to Atherina presbyter.

In Hepsetia boyeri the mandibular rami are slender and not elevated posteriorly, and the premaxillary processes are rather blunt and scarcely more than half as long as the eye. The specimen examined by us, from the United States National Museum, is part of the Bonaparte collection.

27. Hepsetia pinguis (Lacépède), 1803).$^{St.}$

Atherina pinguis Lacépède, *Hist. Poiss.*, 5, 372, pl. 11, 1803; Günther, *Catalogue Fishes Brit. Mus.*, 3, 399, 1861; Day, *Fishes of India*, 334, 1876; Klunzinger, *Verh. Zool.-bot. Ges. Wien*, 20, 833, 1870; *Fische des Rothen Meeres*, 130, 1884; Sauvage, *Hist. Madag., Poiss.*, 409, 1891; Ogilby, *Mem. Queensl. Mus.*, 1, 38, pl. 12, fig. 1, 1912.
Type-locality.—Mauritius.

Atherina affinis Bennett, *Proc. Zool. Soc. London*, 166, 1831.
Type-locality.—Mauritius.

Atherina punctata Bennett, *Proc. Zool. Soc. London*, 184, 1832.
Type-locality.—Mauritius.

Atherina pectoralis Cuvier and Valenciennes, *Hist. Nat. Poiss.*, 10, 447, 1835.
Type-locality.—Mauritius (now restricted).

Atherinichthys cephalotes Castelnau,[12] *Proc. Zool. Soc. Victoria*, 1, 137, 1872; Macleay, *Proc. Linn. Soc. N. S. Wales*, 6, 43, 1881 (1882) (after Castelnau).
Type-locality.—Victoria.

? Atherinichthys picta Castelnau, *Proc. Zool. Soc. Victoria*, 1, 137, 1872; Macleay, *Proc. Linn. Soc. N. S. Wales*, 6, 42, 1881 (1882) (after Castelnau).
Type-locality.—Capt. Sinnot's Dock, on the lower Yarra, Australia.

? Atherinichthys modesta Castelnau, *Proc. Zool. Soc. Victoria*, 1, 137, 1872; Macleay, *Proc. Linn. Soc. N. S. Wales*, 6, 42, 1881 (1882) (after Castelnau).
Type-locality.—Hobson's Bay, Australia (now restricted).

Atherina lacunosa Günther, *Journ. Mus. Godeffr.*, 13, 213, pl. 118, fig. E, 1877; Waite, *Rec. Canterb. Mus.*, 1, 15, 1907 (not of Forster).

Atherina forskali Jordan and Starks, *Ann. Carn. Mus.*, 11, 439, 1917; Jordan and Hubbs, *ibid.*, 462, pl. 46 (not of Rüppell).

Range.—Mauritius (Lacépède) and the eastern coast of Africa (Günther), north to the Gulf of Suez (Cuvier and Valenciennes) and the eastern Mediterranean, apparently having passed through the Suez Canal (Jordan and Hubbs); eastward to India (Day), East Indies (Bleeker), and New Guinea (Alleyne and Macleay); Australia (Ogilby) to New Caledonia, New Hebrides, and Fiji Islands (Günther); ?New Zealand (Hutton).

As Mr. Ogilby has suggested, it is probable that a detailed study of this form throughout the wide range which has been ascribed to it, would indicate that it is really divisible into several local species.

The discovery by us of this species in the Mediterranean is the first indication with which we are acquainted, that the Suez Canal has served as a channel through which fishes have extended their ranges.

---

[12] Mr. Allan R. McCulloch mentions in correspondence, that, judging from a photograph of the type in the Paris Museum, Atherinichthys cephalotes is merely A. pinguis Lacépède. Castelnau's picta and modesta may also belong here, but the brevity and inaccuracy of the descriptions make the reference doubtful.

In H. PINGUIS the premaxillary processes are about half as long as the eye, and the mandibular rami are not elevated posteriorly.

28. **Hepsetia edelensis** (Castelnau), 1872.

ATHERINICHTHYS EDELENSIS Castelnau, *Proc. Zool. Soc. Victoria*, **2**, 134, 1873; Macleay, *Proc. Linn. Soc. N. S. Wales*, **6**, 42, 1881 (1882) (after Castelnau).

Type-locality.—Freemantle, western Australia.

Range.—Shores of western Australia.

The inadequate description of this species renders its generic disposition doubtful.

29. **Hepsetia lacunosa** (Forster), 1801.

ATHERINA LACUNOSA Forster, in Bloch and Schneider, *Syst. Ichth.*, 112, 1801; *idem.*, *Desc. Anim.*, Lichtenstein ed., 298, 1844; Ogilby, *Mem. Queensl. Mus.*, **1**, 40, pl. 12, fig. 2, 1912.

Type-locality.—New Caledonia.

Range.—New Caledonia and eastern Australia.

We follow Mr. Ogilby in accepting this species. It is possible that it should be retained in ATHERINA.

30. **Hepsetia morrisi** (Jordan and Starks), 1906.$^{St.}$

(Plate I, Fig. 2)

ATHERINA MORRISI Jordan and Starks, *Proc. U. S. Nat. Mus.*, **30**, 697, fig. 3, 1906.

Type-locality.—Miyanoura, Yaku Island, southeast of Kiusiu, Japan.

Range.—Shores of islands of southern Japan.

HEPSETIA MORRISI is closely related to H. PINGUIS. It agrees with that species in the characters of the mandibular rami and premaxillary processes.

31. **Hepsetia insularum** (Jordan and Evermann), 1903.$^{St.}$

(Plate I, Fig. 3)

ATHERINA INSULARUM Jordan and Evermann, *Bull. U. S. Fish. Comm.*, **22**, 170, 1902 (1903); **23**, 138, fig. 47, 1903 (1905).

Type-locality.—Honolulu, Hawaii.

Range.—Hawaiian Islands.

Gill-rakers, 7 + 23; vomerine teeth moderate; mandibular rami not elevated within the mouth.

32. **Hepsetia valenciennesii** (Bleeker), 1853.

ATHERINA VALENCIENNESII Bleeker, *Nat. Tijdschr. Neder.-Indië*, **5**, 507, 1853; *Günther, Catalogue Fishes Brit. Mus.*, **3**, 398, 1861 (after Bleeker).

Type-locality.—Padang.

Range.—Shores of the East Indies (Padang, Batavia, and Singapore).

This species may belong in ATHERINA.

33. Hepsetia afra (Peters), 1855.

ATHERINA AFRA Peters, *Archiv. Naturg.*, **1**, 244, 1855; Günther, *Catalogue Fishes Brit. Mus.*, **3**, 398, 1861 (after Peters).

Type-locality.—Coast of Mozambique.

Range.—Shores of eastern Africa.

34. Hepsetia regina (Seale), 1909.

ATHERINA REGINA Seale, *Phila. Journ. Sci.* (A), **4**, 496, pl. 3, fig. 1, 1909.

Type-locality.—Culion Island, Philippine Islands.

Range.—Philippine Islands (recorded from Culion and Busuanga).

35. Hepsetia balabacensis (Seale), 1909.$^{St.}$

ATHERINA FORSKALII Evermann and Seale, *Bull. U. S. Bur. Fish.*, **26**, 59, 1906 (1909) (not of Rüppell).

ATHERINA (?) LACUNOSA Jordan and Richardson, *Bull. U. S. Bur. Fish.*, **27**, 243, 1907 (not of Forster).

ATHERINA BALABACENSIS Seale, *Phila. Journ. Sci.* (A) **4**, 498, pl. 3, fig. 2, 1909.

Type-locality.—Near mouth of small stream, Balabac Island, Philippine Islands.

Range.—Philippine Islands.

We have re-examined the material recorded as A. FORSKALII by Evermann and Seale and that doubtfully named A. LACUNOSA by Jordan and Richardson, and find both lots referable to H. BALABACENSIS. This species is perhaps indistinguishable from the next.

36. Hepsetia lineata (Günther), 1872.

ATHERINA LINEATA Günther, *Ann. Mag. Nat. Hist.*, **10**, 398, 1872.

Type-locality.—Cebu.

Range.—East Indies.

37. Hepsetia duodecimalis (Cuvier and Valenciennes), 1835.

ATHERINA DUODECIMALIS Cuvier and Valenciennes, *Hist. Nat. Poiss.*, **10**, 458, 1835; Bleeker, *Nat. Tijdschr. Neder.-Indië*, **2**, 485, 1851; Günther, *Catalogue Fishes Brit. Mus.*, **3**, 400, 1861 (after Bleeker).

Type-locality.—Ceylon.

Range.—Ceylon; East Indies.

38. Hepsetia brachyptera (Bleeker), 1851.

ATHERINA BRACHYPTERA Bleeker, *Nat. Tijdschr. Neder.-Indië*, **2**, 243, 1851; Günther, *Catalogue Fishes Brit. Mus.*, **3**, 401, 1861 (after Bleeker).

Type-locality.—Coast of Banda Nera.

Range.—East Indies.

This species perhaps belongs in ATHERINA.

39. Hepsetia stipes (Müller and Troschel), 1848.$^{St.}$

(Plate I, Fig. 4)

?ATHERINA TÆNIATA Spix, in Agassiz, *Pisc. Brasil.*, 135, pl. 30, fig. 2, 1829.

CHIROSTOMA (?)TÆNIATUM Ribeiro, *Arch. Mus. Nac. Rio de Janeiro*, **17**, "Trematolepides," 10, 1915.

Type-locality.—"Atlantic Ocean" (off Brazil).

ATHERINA STIPES Müller and Troschel, in Schomburgk, *Hist. Barbadoes*. 671, 1848; Günther, *Catalogue Fishes Brit. Mus.*, **3**, 400, 1861; Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **47**, pt. 1, 790, 1896; pt. 4, pl. 122, fig. 332, 1900.
Type-locality.—Barbadoes.

ATHERINA LATICEPS Poey, *Mem. Hist. Nat. Cuba*, **2**, 790, 1861; Jordan and Everman, *Bull. U. S. Nat. Mus.*, **47**, pt. 1, 790, 1896.
Type-locality.—Havana, Cuba.

ATHERINA VELIANA Goode and Bean, *Proc. U. S. Nat. Mus.*, **1**, 342, 1879.
Type-locality.—Clear Water Harbor, Florida.

Range.—Shores of the western Atlantic from Florida to Panama; West Indies.

We have examined large series of HEPSETIA from the shores of the western Atlantic, but fail to distinguish more than one species. The name TÆNIATA may be applicable to this species, but the original description and figure of TÆNIATA indicate a fish with smaller head and more anal rays. Our material comes from Florida (Key West; Barnes Sound; Dry Tortugas); Cuba, Porto Rico; Bahamas; Jamaica; British Honduras, and Panama.

HEPSETIA STIPES corresponds in all respects to our diagnosis of the genus.

40. Hepsetia evermanni (Eigenmann), 1903.$^{St.}$

(Plate II, Fig. 5)

ATHERINA EVERMANNI Eigenmann, *Bull. U. S. Fish Comm.*, 228, fig. 9, 1902 (1903).
Type-locality.—San Cristobal, Cuba.

Range.—Fresh waters of Cuba.

This species has larger scales than any other form of the genus, and the anal fin is unusually large, as also in H. INSULARUM.

XVI. ATHERINA Linnæus, 1758.

ATHERINA (Artedi) Linnæus, *Syst. Nat.*, ed. 10, 315, 1758; Günther, *Catalogue Fishes Brit. Mus.*, **3**, 392, 1861 (in part); Jordan and Gilbert, *Bull. U. S. Nat. Mus.*, **16**, 404, 1883 (in part); Jordan and Evermann, *ibid.*, **47**, pt. 1, 789, 1896 (in part); Borsieri, *Ann. Agricolt.*, 16, 1902 (1904) (in part); Fowler, *Proc. Acad. Nat. Sci. Phila.*, **40**, 727, 1904 (in part).
Haplotype.—ATHERINA HEPSETUS Linnæus.

TÆNIOMEMBRAS Ogilby, *Proc. Linn. Soc. N. S. Wales*, **23**, 41, 1898; McCulloch, *Zool. Res. Fish. Exp. Endeavour*, pt. 1, 32, 1911.
Orthotype.—ATHERINA MICROSTOMA Günther.

Range.—In the Atlantic Ocean from the Bermudas and Florida to Panama, and from the Scandinavian Peninsula and England to the Madeira and Canary Islands; Mediterranean, Black, and Caspian Seas; South Africa; Madagascar; Indian Ocean; East Indies, and north to central Japan, east through the Pacific Islands, and southeast to eastern Australia and Tasmania.

Even in the restricted sense in which we adopt it, the genus ATHERINA comprises a large number of species which differ considerably from one another. The variations of chief significance involve the position of the first dorsal, the position of the anus in reference to anal and ventral fins, the size of the scales, the size of the mouth, the length of the premaxillary processes, etc. Several of the species have been described as lacking vomerine teeth, a character in need of confirmation.

41. **Atherina hepsetus** Linnæus, 1758.$^{St.}$

ATHERINA HEPSETUS Linnæus, *Syst. Nat.*, ed. 10, 315, 1758; Cuvier and Valenciennes, *Hist. Nat. Poiss.*, **10**, 423, pl. 302, 1835; Günther, *Catalogue Fishes Brit. Mus.*, **3**, 393, 1861; Borsieri, *Ann. Agricolt.*, 24, pl. 7, 1902 (1904).

Type-locality.—Mediterranean Sea.

? ATHERINA PRESBYTER Guichenot, *Exp. Sci. Algérie*, **3**, 66, 1850 (? not of Cuvier).

? ATHERINA LACUSTRIS Martens, *Arch. Naturg.*, 23, 167, pl. 9, figs. 1, 2, 1857 (? in part); Günther, *Catalogue Fishes Brit. Mus.*, **3**, 394, 1861.

? ATHERINA BOYERI Günther, *Catalogue Fishes Brit. Mus.*, **3**, 394, 1861 (in part).

ATHERINA BOYERI Jordan and Gunn, *Proc. Acad. Nat. Sci. Phila.*, 340, 1898 (not of Risso).

Range.—Mediterranean Sea; ? lakes of Italy; Black Sea; Canary Islands.

The specimens of ATHERINA from the Canaries, recorded by Jordan and Gunn as A. BOYERI, are apparently referable to A. HEPSETUS, as they have 13 soft anal rays and almost 55 rows of scales. The island form, however, requires further study, for it may prove to be a distinct species. Lowe's record of A. PRESBYTER from Madeira may be based on the same island species.

42. **Atherina presbyter** Cuvier, 1829.

ATHERINA PRESBYTER Cuvier, *Règne Anim.*, **2**, 235, ed. 2, 1829; *Règne Anim., Ill. Poiss.*, pl. 76, fig. 3; Cuvier and Valenciennes, *Hist. Nat. Poiss.*, **10**, 439, pl. 305, 1835; Günther, *Catalogue Fishes Brit. Mus.*, **3**, 392, 1861; Borsieri, *Ann. Agricolt.*, 18, pl. 6, 1902 (1904).

Type-locality.—Ocean shore of Europe.

Range.—Atlantic coast of Europe, north to England and the Scandinavian Peninsula.

43. **Atherina caspia** Eichwald, 1831.$^{St.}$

ATHERINA HEPSETUS, var. 2 Delaroche, *Ann. Mus. Hist. Nat. Paris*, **13**, 358, 1809.

ATHERINA PRESBYTER, var. CASPIA Eichwald, *Zoologia Specialis*, *72*, 1831.

ATHERINA CASPIA Eichwald, *Bull. Soc. Imp. Nat. Moscou*, **3**, 136, 1838; *Nouv. Mém. Soc. Imp. Nat. Moscou*, **7**, 205, pl. 33, figs. 1, 2, 1841.

Type-locality.—*Caspian Sea.* ("e sinu balchanensis").

ATHERINA PRESBYTER, var. PONTICA Eichwald, *Zoologia Specialis*, *72*, 1831.

ATHERINA PONTICA Eichwald, *Bull. Soc. Imp. Nat. Moscou*, **3**, 137, 1838; *Nouv. Mém. Soc. Imp. Nat. Moscou*, **7**, 206, pl. 33, figs. 3, 4, 1841; Günther, *Catalogue Fishes Brit. Mus.*, **3**, 393, 1861.

Type-locality.—Near Odessa, on the Black Sea.

ATHERINA MOCHON Cuvier and Valenciennes, *Hist. Nat. Poiss.*, **10**, 434, pl. 304, 1835; Steindachner, *Sitzb. Akad. Wiss. Wien*, **57**, 678, 1868; Lönnberg, *Bih. Svenska Vet.-Akad., Handl.*, **26**, pt. 4, No. 8, p. 8, 1900; Boulenger, *Zool. Egypt*, 3 (Fishes Nile), 423, 1907; *Catalogue Fresh-water Fishes Africa*, **4**, 74, 1916.

ATHERINA MOCHO Günther, *Catalogue Fishes Brit. Mus.*, **3**, 399, 1861 (altered spelling).

Type-locality.—Iviza, Mediterranean Sea.

ATHERINA RISSO Cuvier and Valenciennes, *Hist. Nat. Poiss.*, **10**, 435, 1835, Moreau, *Hist. Nat. Poiss. France*, **3**, 210, 1881.

ATHERINA RISSOI Borsieri, *Ann. Agricolt.*, 47, pl. 10, 1902 (1904).

Type-locality.—Nice, France.

ATHERINA SARDA Cuvier and Valenciennes, *Hist. Nat. Poiss.*, **10**, 435, 1835; Carus, *Prodr. Fauna Med.*, *Pisces*, 704, 1893.

Type-locality.—Sardinia.

ATHERINA LACUSTRIS Bonaparte, *Fauna Italica*, *Pesci*, **3**, no pagination, pl. 91, fig. 3, 1836; Martens, *Arch. Naturg.*, **23**, 167, pl. 9, figs. 1, 2, 1857 (? in part only); Fowler, *Proc. Acad. Nat. Sci. Phila.*, **40**, 727, 1904.

? ATHERINA LACUSTRIS Günther, *Cat. Fishes Brit. Mus.*, **3**, 394, 1861 (? in part).

Type-locality.—Lake Albano, Italy (now restricted).

ATHERINA BOIERI Depéret, *Bull. Soc. Hist. Nat. Toulouse*, **17**, 82, 1883 (not of Risso).

ATHERINA HYALOSOMA Facciola, in Cocco, *Nat. Sicil.*, **4**, 239, 1885; Carus, *Prodr. Fauna Med.*, *Pisces*, 704, 1893.

Type-locality.—Italy.

ATHERINA RIQUETI Roule, *Zool. Anz.*, **25**, 262, 4 figs., 1902; *Feuille Jeunes Natural.*, *Paris* (4), **32**, 172, figs., 1902; *Nature, Paris*, **30**, pt. 2, 56, 3 figs., 1902; *C. R. Acad. Sci. Paris*, **136**, 824, 1903; **137**, 1276, 1903.

ATHERINA MOCHON, var. RIQUETI Boulenger, *Zool. Egypt*, **3** (Fishes Nile), 424, 1907.

Type-locality.—Canal du Midi, France.

ATHERINA SARDINELLA Fowler, *Proc. Acad. Nat. Sci. Phila.*, **40**, 729, pl. 41, upper figure, 1904.

Type-locality.—Italy.

ATHERINA MOCHON, var. ÆGYPTIACA Boulenger, *Zool. Egypt*, **3** (Fishes Nile), 424, fig., 1907; *Catalogue Fresh-water Fishes Africa*, **4**, 75, fig., 1916.

Type-locality.—Lakes of Egypt.

Range.—Mainland and island shores of the Mediterranean Sea, and the adjacent lakes.

This form enters fresh water, like other fishes of similar habit forming there numerous local races. Whether some of these races are sufficiently distinct to warrant their recognition in nomenclature, either as subspecies or species, must be determined by those having extensive series. Having but few specimens, we provisionally follow Boulenger in uniting all under a common name. We note, however, that the name CASPIA has clear priority, a fact which seems wholly to have escaped the attention of European ichthyologists. If for some reason the name CASPIA should prove unavailable, then PONTICA should be used. These two names were first proposed by Eichwald in 1831, four year before Cuvier and Valenciennes fixed the name MOCHON upon Delaroche's ATHERINA HEPSETUS, var. 2 (see synonomy). It is true that Delaroche applied the names "MOCHO ou MOCHON" to this form in 1809, but in the vernacular sense; similarly he applied the names "CHUCLET ou PESCIO REY" to his var. 1, which is currently identified with typical A. HEPSETUS. In 1810 five other species[18] of ATHERINA were described, all from Italy, but the descriptions contain little that is tangible. Some of these, of course, may have been based upon the species under discussion.

---

[18] ATHERINA MARMORATA Risso, *Ichth. Nice*, 339, 1810 (young); ATHERINA MINUTA Risso, *ibid.*, 340 (young) ATHERINA CORONEDA, A LATTARINA, and A. NUNNATA, Rafinesque, *Caratteri*, 57, 1810.

The preliminary diagnosis of CASPIA and PONTICA, apparently not being readily accessible, we reprint below.

"1. A. PRESBYTER Cuv., A. HEPSETUS L., rostro breviore pinna dorsi priore 8, secunda 12, anali 15-16 radiis. Hab. in oceano, caspio mari et nigro;
var. CASPIA, e sinu balchanensi, 4 poll. 8 lin. longa, dorso crassissimo, plano, fronte recta, ore supero, ita ut suprema pars extrema maxillæ utriusque cum supremo margine maximi oculi tumidi in una linea sita sit; fascia argentea omnino recta;
var. PONTICA prope Odessam parum minor, dorso abdominesque minus crassis, acutioribus, fronte valde declivi, ita ut oris extrema pars acuminata cum inferiore margine pupillæ in eadem linea adpareat; pinna dorsi prior plurimum 8, secunda 12-13, at analis 14-15 radiis instructa; apud ill. PALLASIUM (zoogr. ross. p. 225), numerantur, nescioquo jure, in utraque pinna dorsi 9 radii, et 12 in anali."

44. **Atherina bonapartii** Boulenger, 1907.$^{St.}$

ATHERINA MOCHON Borsieri, *Ann. Agricolt.*, 39, pl. 9, 1902 (1904) (and of Italian authors in general, but not of Delaroche and Cuvier and Valenciennes, *fide*, Boulenger).

ATHERINA BONAPARTII Boulenger, *Zool. Egypt*, 3 *(Fishes Nile)*, 426, 1907.

Type-locality.—Shores of Italy (by inference).

Range.—Shores of Italy.

45. **Atherina carolina** Cuvier and Valenciennes, 1835.

ATHERINA CAROLINA Cuvier and Valenciennes, *Hist. Nat. Poss.*, **10**, 445, 1835; Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **47**, pt. 1, 791, 1896.

Type-locality.—Carolina (probably an error).

Range.—Unknown.

46. **Atherina harringtonensis** Goode, 1877.$^{St.}$

There are two American forms of true ATHERINA. As they differ only in average characters, we regard them as subspecies. Both have the mandibular rami elevated posteriorly; the premaxillary spines slender and a little more than half as long as the eye; the snout not very short and blunt; the interorbital not very broad; the eye not very large; the head not very large; the body rather slender and not strongly compressed. The anus is about twice as distant from the anal fin as from the insertion of the short ventrals; these fins extending little beyond the anus.

46a. **Atherina harringtonensis harringtonensis** Goode, 1877.$^{St.}$

ATHERINA HARRINGTONENSIS Goode, *Amer. Journ. Sci. Arts* (3), **14**, 297, 1877; Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **47**, pt. 1, 791, 1896; Bean, *Publ. Field Mus.* (*Zool.*), **7**, 40, 1906.

Type-locality.—Harrington Sound; Bermudas.

Range.—"All of the lagoons and protected bays of the Bermudas" (Goode).

This island variety differs from the form of the mainland and the West Indies only in average characters: the scales are usually more numerous, the fin rays more numerous, and the head shorter. The variations of these characters are indicated in the following tables:

TABLE OF COUNTS AND MEASUREMENTS.

Locality	Bermudas							
	Castle Harbor	Shelly Bay	Nonesuch Bay		Packward's Bay	Long Bird Is.	Soldier Bay	
Fin rays: first dorsal	VI	V	VI	VII	V	VI	VI	VI
" " second dorsal	I, 11	I, 11	I, 11	I, 11	I, 11	I, 10	I, 10	I,10
" " anal	I, 12	I, 13	I, 12	I, 12	I, 12	I, 12	I, 12	I, 12
Scales: transverse rows	47	46	47	46	50	47	44	46
" longitudinal rows	7	7	7	6	8	7	7	7
Depth of body	6.6	6.0	6.0	6.0	5.6	6.7	6.6	6.2
Depth of caudal peduncle	3.4	3.4	3.7	3.5	3.5	4.0	3.4	3.5
Length of head	4.5	4.6	4.3	4.4	4.3	4.3	4.2	4.0
Diameter of eye	2.7	2.65	2.8	2.7	2.8	3.0	2.6	2.6
Width of interorbital	2.9	3.1	3.3	3.0	3.2	3.0	2.7	2.8
Length of snout	4.0	3.7	3.7	3.6	3.7	3.8	4.0	4.0
Length to caudal, mm	60	52	56	55	55	66	46	43

46b. Atherina harringtonensis aræa (Jordan and Gilbert), 1884.$^{St.}$

(Plate III, Fig. 9)

ATHERINA ARÆA Jordan and Gilbert, *Proc. U. S. Nat. Mus.*, 7, 27, 1884; Jordan and Evermann, *Bull. U. S. Nat. Mus.*, 47, pt. 1, 790, 186; 4, pl. 123, fig. 333, 1900; Evermann and Marsh, *Bull. U. S. Fish. Comm.*, 111, fig. 23, 1900; Cockerell, *Proc. Biol. Soc. Wash.*, 28, 151, 157, 1915.

Type-locality.—Key West, Florida.

Range.—From the Florida Keys to the Atlantic coast of Panama; Porto Rico.

TABLE OF COUNTS AND MEASUREMENTS

Locality	Key West		Culebra, Porto Rico		Isthmus of Panama				Locality doubtful[14]	
Fin rays: first dorsal	VI	—	VI	V	V	V	VI	V	—	—
" second dorsal	—	—	I, 10	I, 10	I, 9	I, 10	I, 10	I. 10	—	—
" anal	—	—	I, 11	I, 12	I, 11	I, 11	I, 12	I, 11	—	—
Scales: transverse rows	44	43	43	43	43	43	44	42	44	43
" longitudinal rows	7	7	7	7	7	7	6	6	—	—
Depth of body	—	—	6.4	6.2	5.65	5.6	5.6	5.7	—	—
Depth of caudal peduncle	—	—	3.8	4.0	3.5	3.7	3.5	3.6	—	—
Length of head	4.2	—	3.9	3.7	3.9	3.8	3.9	4.3	3.7	3.65
Diameter of eye	2.6	—	2.7	2.65	2.7	2.6	2.8	2.65	2.6	2.6
Width of interorbital	3.2	2.8	3.3	3.0	3.1	3.0	3.0	3.2	3.3	3.4
Length of snout	3.7	—	3.7	4.0	4.0	4.0	3.8	4.0	3.8	3.9
Length to caudal, mm	38	36	50	46	52	52	45	46	45	41

---

[14] Probably Key West or Porto Rico.

47. **Atherina breviceps** Cuvier and Valenciennes, 1835.

ATHERINA BREVICEPS Cuvier and Valenciennes, *Hist. Nat. Poiss.*, **10**, 445, 1835; Günther, *Catalogue Fishes Brit. Mus.*, **3**, 395, 1861.

Type-locality.—Cape of Good Hope.

Range.—Shores of Southern Africa.

48. **Atherina parvipinnis** Cuvier and Valenciennes, 1835.

ATHERINA PARVIPINNIS Cuvier and Valenciennes, *Hist. Nat. Poiss.*, **10**, 446, 1835; Günther, *Catalogue Fishes Brit. Mus.*, **3**, 396, 1861; Sauvage, *Hist. Madag., Poiss.*, 408, pl. 43, fig. 3, 1891.

Type-locality.—Cape of Good Hope.

Range.—Shores of southern Africa and Madagascar.

49. **Atherina forskalii** (Rüppell), 1837.$^{St.}$

? ATHERINA HEPSETUS Forskål, *Descr. Anim.*, 69, 1775 (not of Linnæus).

ATHERINA FORSKALII Rüppell, *Neue Wirbelthiere, Fische*, 132, pl. 33, fig. 1, 1837; Günther, *Catalogue Fishes Brit. Mus.*, **3**, 397, 1861; Day, *Fishes of India*, 345, pl. 71, fig. 4, 1876.

ATHERINA FORSKALII Klunzinger, *Fische des Rothen Meeres*, 130, pl. 11, fig. 3, 1884.

Type-locality.—Djedda, on the Arabian side of the Red Sea.

Range.—Red Sea to the East Indies.

Specimens apparently of the species from Bombay, received under the name of FORSKALII from the British Museum, have the mandibular rami elevated posteriorly. This fact indicates that the species should be retained in ATHERINA, although it bears considerable resemblance to such species of HEPSETIA as H. PINGUIS.

A. FORSKALII seems to have been unknown to American writers. The specimens recorded by them under that name prove upon re-examination to be referable to HEPSETIA PINGUIS, and H. BALABACENSIS.

50. **Atherina bleekeri** Günther, 1861.$^{St.}$

ATHERINA JAPONICA Bleeker, *Verh. Bat. Gen.*, **25**, 40, fig. 2, 1853 (not ATHERINA JAPONICA Houttuyn, a clupeid fish).

Type-locality.—Nagasaki, Japan.

ATHERINA BLEEKERI Günther, *Catalogue Fishes Brit. Mus.*, **3**, 398, 1861; Jordan and Starks, *Proc. U. S. Nat. Mus.*, **24**, 201,1901.

Type-locality.—China.

ATHERINA VALENCIENNESI Nyström, *Svenska Vet. Akad., Handl.*, **13**, pt. 4, No. 4, 38, 1887 (not of Bleeker).

Range.—Shores of China and of Japan, north to Tokyo.

The mandibular rami of this species and the next are moderately elevated posteriorly. The anus in each is extremely advanced in position, being about opposite the middle of the ventrals.

51. **Atherina woodwardi** Jordan and Starks, 1901.$^{St.}$

(Plate II, Fig. 6)

ATHERINA (?) PINGUIS Ishikawa and Matsuura, *Prel. Cat. Fishes, Tokyo*, 33, 1897 (not ATHERINA PINGUIS Lacépède).

ATHERINA WOODWARDI Jordan and Starks, *Proc. U. S. Nat. Mus.*, **24**, 200, fig. 1, 1901.

Type-locality.—Okinawa, one of the islands of the Riukiu groups.

Range.—Shores of the Riukiu Archipelago.

52. **Atherina endrachtensis** (Quoy and Gaimard), 1824.

ATHERINA ENDRACHTENSIS Quoy and Gaimard, *Voy. Uranie, Zool.*, 334, 1824; Cuvier and Valenciennes, *Hist. Nat. Poiss.*, **10**, 456, 1835; Günther, *Catalogue Fishes Brit. Mus.*, **3**, 401, 1861 (after Cuvier and Valenciennes); Kendall and Goldsborough *Mem. Mus. Comp. Zool.*, **26**, 254, 1911.

Type-locality.—Endracht.

Range.—Coasts of Australia, New Guinea, and the islands of the South Pacific.

We are uncertain as to the genus in which this species should be placed.

53. **Atherina vaigiensis** Quoy and Gaimard, 1824.

ATHERINA VAIGIENSIS Quoy and Gaimard, *Voy. Uranie, Zool.*, 335, 1824; Kendall and Goldsborough, *Mem. Mus. Comp. Zool.*, **26**, 255, 1911.

Type-locality.—Waigiu, near New Guinea.

? ATHERINA CYLINDRICA Cuvier and Valenciennes, *Hist. Nat. Poiss.*, **10**, 453, 1835.

Type-locality.—Waigiu (now restricted).

Range.—East Indies and probably the South Sea Islands.

This species, with the three which follow, may belong to HEPSETIA. We have seen none of them.

54. **Atherina temminckii** Bleeker, 1853.

ATHERINA TEMMINCKII Bleeker, *Nat. Tijdschr. Neder.-Indië*, **5**, 506, 1853; Evermann and Seale, *Bull. U. S. Bur. Fish.*, **26**, 59, 1907.

Type-locality.—Batavia.

Range.—East Indies and Philippine Islands.

55. **Atherina bimanensis** Bleeker, 1848.

ATHERINA BIMANENSIS Bleeker, *Journ. Ind. Archip.*, **2**, 637, 1848.

Type-locality.—Sumbawa.

Range.—East Indies.

56. **Atherina argyrotænia** Bleeker, 1849.

ATHERINA ARGYROTÆNIA Bleeker, *Journ. Ind. Archip.*, **3**, 72, 1849.

Type-locality.—Celebes.

Range.—East Indies.

This species is usually known as ATHERINA ARGYROTÆNIATA, *an* unnecessary alteration of spelling adopted by Bleeker in 1858.

57. **Atherina tsurugæ** Jordan and Starks, 1902.$^{St.}$

(Plate II, Fig. 7)

ATHERINA TSURUGÆ Jordan and Starks, *Proc. U. S. Nat. Mus.*, **24**, 202, fig. 2, 1902.

Type-locality.—Nagasaki, Hizen, Japan.

Range.—Shores of eastern Japan from Nagasaki northward to Misaki and Tsuruga.

This species is a true ATHERINA, having the mandibular rami elevated posteriorly, the premaxillary processes more than half as long as the eyes, the head rather pointed, and the body slender.

58. **Atherina uisila** Jordan and Seale, 1906.St.

ATHERINA UISILA Jordan and Seale, *Bull. U. S. Bur. Fish.*, **25**, 216, fig. 23, 1906; Kendall and Goldsborough, *Mem. Mus. Comp. Zool.*, **26**, 255, 1911.

ATHERINA INSILA Seale, *Phila. Journ. Sci.* (A), **4**, 498, 1909 (misspelled).

Type-locality.—Apia, Samoa.

Range.—Samoan and Marshall Islands, South Pacific.

The mandibular rami are elevated posteriorly in this species, and the premaxillary processes are considerably more than half as long as the eye.

ATHERINA UISILA is related most closely to the Japanese A. TSURUGÆ and the Philippinne A. PANATELA.

59. **Atherina panatela** Jordan and Richardson, 1908.St.

(Plate II, Fig. 8.)

ATHERINA PANATELA Jordan and Richardson, *Bull. U. S. Bur. Fish.*, **27**, 243, fig. 6, 1908.

Type-locality.—Calayan Island, Philippine Islands.

Range.—Philippine Islands.

In this species the premaxillary processes are as long as the eye, and the mandibular rami are elevated posteriorly.

60. **Atherina elongata** Klunzinger, 1879.

ATHERINA ELONGATA Klunzinger, *Sitzb. Akad. Wiss. Wien*, **80**, 394, pl. 3, fig. 4, 1880.

Type-locality.—King George's Sound.

Range.—Shores about King George's Sound, Australia.

ATHERINA ELONGATA, judging from the original description closely resembles A. MICROSTOMA, and may prove to be identical with it.

61. **Atherina microstoma** Günther, 1861.St.

ATHERINA MICROSTOMA Günther, *Catalogue Fishes Brit. Mus.*, **3**, 401, 1861; Macleay, *Proc. Linn. Soc. N. S. Wales*, **6**, 39, 1881 (1882); Johnston, *Pap. Proc. Roy. Soc. Tasmania*, 122, 1882 (1883); 34, 1890 (1891).

TÆNIOMEMBRAS MICROSTOMUS Ogilby, *Proc. Linn. Soc. N. S. Wales*, **23**, 41, 1898; McCulloch, *Zool. Res. Fish. Exp. Endeavour*, **1**, 32, pl. 10, fig. 2, 1911.

Type-locality.—Tasmania.

Range.—Shores of Tasmania and Victoria.

Mr. McCulloch has sent us specimens of this species from Queenscliff, Victoria. These specimens, like those of the next species examined, have the mandibular rami elevated postriorly, and the premaxillary processes more than half as long as the eye. The gill-rakers in these species are no fewer than in some specimens of A. CASPIA, and the mouth is scarcely smaller than in several other species of the genus. Considering these facts, we do not feel justified in accepting as valid the nominal genus TÆNIOMEMBRAS.

62. **Atherina tamarensis** Johnston, 1883.St.

ATHERINA TAMARENSIS Johnston, *Pap. Proc. Roy. Soc. Tasmania*, 122, 1882 (1883).
TÆNIOMEMBRAS TAMARENSIS McCulloch and Waite, *Rec. S. Austral. Mus.*, 1, 41, 1918.
Type-locality.—Launceston Bar, River Tamar, Tasmania.
ATHERINA TASMANIENSIS Macleay, *Proc. Linn. Soc. N. S. Wales*, 9, 443, 1884 (misprint for TAMARENSIS).
ATHERINICHTHYS CEPHALOTES Zietz, *Trans. Roy. Soc. S. Austral.*, 33, 264, 1909 (not ATHERINICHTHYS CEPHALOTES Castelnau).
Range.—Shores and streams of Tasmania and South Australia.

63. **Atherina presbyteroides** Richardson, 1843.

ATHERINA PRESBYTEROIDES Richardson, *Ann. Mag. Nat. Hist.* (1), 11, 179, 1843; Günther, *Catalogue Fishes Brit. Mus.*, 3, 397, 1861 (after Richardson); Macleay, *Proc. Linn. Soc. N. S. Wales*, 6, 37, 1881 (1882) (after Richardson).
Type-locality.—Port Arthur, Tasmania.
Range.—Shores of Tasmania.

The advanced position of the spinous dorsal in this species indicates relationship with A. MICROSTOMA. Possibly the two are identical.

64. **Atherina hepsetoides** Richardson, 1843.

ATHERINA HEPSETOIDES Richardson, *Ann. Mag. Nat. Hist.* (1), 11, 178, 1843; Günther, *Catalogue Fishes Brit. Mus.*, 3, 397, 1861 (after Richardson); Macleay, *Proc. Linn. Soc. N. S. Wales*, 6, 37, 1881 (1882) (after Richardson).
Type-locality.—Port Arthur, Tasmania.
Range.—Shores of Tasmania.

This species may prove identical with the next.

65. **Atherina dannevigi** McCulloch, 1911.

ATHERINA HEPSETUS Günther, *Ann. Mag. Nat. Hist.* (4), 17, 396, 1876 (not of Linnæus).
ATHERINA DANNEVIGI McCulloch, *Zool. Res. Fish. Exp. Endeavour*, 1, 31, pl. 16, fig. 2, 1911.
Type-locality.—Oyster Bay, Tasmania.
Range.—Shores of Tasmania and southern Australia.

This species has the mandibular rami elevated posteriorly, a character determined for us by Mr. McCulloch. This and other characters seem to place it in the genus ATHERINA. The scales, however, are smaller than in any other species, there being about 75 transverse series. The first dorsal is advanced in position, as in several other Australian species of the genus.

In addition to the type locality, this species was obtained by the *Endeavour* in Spencer Gulf, South Australia, at a recorded depth of 20 fathoms. It is possible, however, that the specimens entered the dredge near the surface.

66. **Atherina gobio** Klunzinger, 1884.

ATHERINA CYLINDRICA Klunzinger, *Verh. zool.-bot. Ges. Wien*, **20**, 834, 1870 (not of Cuvier and Valenciennes).
Type-locality.—Red Sea.

ATHERINA GOBIO Klunzinger, *Fische Rothen Meeres*, 130, pl. 11, fig. 4, 1884 (name a substitute for ATHERINA CYLINDRICA Klunzinger, preoccupied).
Range.—Red Sea.

This species has the appearance of a true ATHERINA, but Klunzinger describes the palate as toothless. This character requires confirmation.

67. **Atherina melanostigma** Day, 1876.

ATHERINA MELANOSTIGMA Day, *Fishes India*, 345, 1876.
Type-locality.—Madras.
Range.—Shores of India.

This species is unknown to us, and may belong in HEPSETIA. According to Dr. Day, it lacks vomerine teeth.

68. **Atherina mugiloides** McCulloch, 1913.

ATHERINICHTHYS PUNCTATUS De Vis, *Proc. Linn. Soc. N. S. Wales*, **9**, 869, 1884 (1885) (not of Bennett).
Type-locality.—Cape York, Australia.

ATHERINA MUGILOIDES McCulloch, *Proc. Roy. Soc. Queensl.*, **24**, 47, fig. 1, 1912 (based on types of ATHERINICHTHYS PUNCTATUS De Vis).
Range.—Northeastern Australia.

Mr. McCulloch informs us that the mandibular rami are elevated posteriorly in this species. In this and other respects it resembles the species of both ATHERINA and CRATEROCEPHALUS. It may be retained in ATHERINA, as the gill-rakers are normal and the mouth fairly large. It resembles the species of CRATEROCEPHALUS and differs from those of ATHERINA, however, in the very large size of the scales and in the lack of vomerine teeth. Several other species of ATHERINA are also described as lacking vomerine teeth; having none of these at hand, we retain them all in ATHERINA.

XVII-XVIII. **CRATEROCEPHALUS** McCulloch, 1912.

CRATEROCEPHALUS McCulloch, *Proc. Roy. Soc. Queensl.*, **24**, 48, 1912.
Orthotype.—CRATEROCEPHALUS FLUVIATILIS McCulloch.
Range.—Fresh waters of Australia.

This genus is composed of several fresh water ATHERINIDÆ of Australia, allied closely to ATHERINA, but distinguished by the few, almost rudimentary gill-rakers, the lack of vomerine teeth, the small mouth, the pointed snout, and the large scales.

69. **Craterocephalus fluviatilis** McCulloch, 1912.St.

CRATEROCEPHALUS FLUVIATILIS McCulloch, *Proc. Roy. Soc. Queensl.*, **24**, 49, pl. 1, fig. 1, 1912.

Type-locality.—North Yanko Creek, Narrandera, N. S. Wales.

Range.—Murray River drainage, Australia.

70. **Craterocephalus stercus-muscarum** (Günther), 1867.St.

ATHERINA STERCUS-MUSCARUM Günther, *Ann. Mag. Nat. Hist.* (3), **20**, 64, 1867; Macleay, *Proc. Linn. Soc. N. S. Wales*, **6**, 40, 1881 (1882) (after Günther).

Type-locality.—Cape York, Australia.

ATHERINICHTHYS MACULATUS Macleay, *Proc. Linn. Soc. N. S. Wales*, **8**, 207, 1883; **9**, 40, 1884.

CRATEROCEPHALUS MACULATUS McCulloch, *Proc. Roy. Soc. Queensl.*, **24**, 52, pl. 1, fig. 2, 1912.

Type-locality.—Lillesmere Lagoon on the lower Burdekin River, Queensland.

Range.—Coastwise streams of Queensland, north to Cape York, Australia.

Mr. McCulloch has sent us specimens of this species from Eidsvold, Burnett River, Queensland. As in C. FLUVIATILIS, the rami of the mandibles are elevated posteriorly.

71. **Craterocephalus eyresii** (Steindachner), 1883.

ATHERINICHTHYS EYRESII Steindachner, *Anz. Akad. Wiss. Wien*, 194, 1883; *Sitzb. Akad. Wiss. Wien*, **88**, 1075, 1884 (*Ichth. Beit.*, **13**, 11, 1883).

CRATEROCEPHALUS EYRESII McCulloch and Waite, *Rec. S. Austral. Mus.*, **1**, 43, fig. 27, 1918.

Type-locality.—Australia, probably in the vicinity of Lake Eyre ("während der Lake Eyre-Expedition gesammelt"). See below.

ATHERINA INTERIORIS Zietz, *Proc. Roy. Soc. S. Austral.*, **33**, 264, 1909 (*nomen nudem*).

Type-locality.—"Overflow of the artesian water of Coward and Strangways Springs, Central Australia."

Range.—Fresh waters of south-central Australia.

We suggest that Strangways Springs, in southern central Australia, be regarded as the definite type locality of this species.

72. **Craterocephalus honoriæ** (Ogilby), 1912.

ATHERINA HONORIÆ Ogilby, *Mem. Queensl. Mus.*, **1**, 42, pl. 12, fig. 3, 1912.

Type-locality.—Nerang Creek, Queensland.

Range.—Streams of Queensland.

The small mouth, short and few gill-rakers, the large scales, and other characters of HONORIÆ seem to place it in or at least near CRATEROCEPHALUS. The dentition is not described. According to McCulloch, the rami of the mandibles are elevated posteriorly.

73. **Craterocephalus obscurus** (Castelnau), 1875.

ATHERINICHTHYS OBSCURA Castelnau, *Researches Fishes Australia*, 31, 1875; Macleay, *Proc. Linn. Soc. N. S. Wales*, 6, 43, 1881 (1882) (after Castelnau).
Type-locality.—Swan River, Western Australia.
Range.—Swan River, Western Australia.

The few distinctive features given in Castelnau's description of this fish point toward relationship with the species of CRATEROCEPHALUS.

74. **Craterocephalus pauciradiatus** (Günther), 1861.

ATHERINA PAUCIRADIATA Günther, *Catalogue Fishes Brit. Mus.*, 3, 401, 1861; Macleay, *Proc. Linn. Soc. N. S. Wales*, 6, 39, 1881 (1882) (after Günther).
Type-locality.—Northwestern Australia.
Range.—Northwestern Australia.

This very distinct species seems to be most similar to those of CRATEROCEPHALUS. The gill-rakers are not described.

One of the fresh-water ATHERINIDÆ of New Guinea, described by Dr. Weber as ATHERINICHTHYS NOUHYSI, belongs in the ATHERININÆ but enters none of the genera of that group as we defined them. Hence we were disposed to make it the type of a new genus. It has the body rather more robust than usual in ATHERINA; the eye is less anterior in position, being located in the middle third of the length of the head; the gape is greatly restricted laterally, being only about half as long as the jaws, which do not quite reach to below the front margin of the eye.

Two Australian species, which are apparently not referable to ATHERINA or HEPSETIA, we provisionally include in this group, as they seem to have some characters, at least, in common with A. NOUHUYSI.

In a letter dated September, 1919, Dr. Lieven F. de Beaufort informs us that both Dr. Max Weber and himself regard A. NOUHUYSI as a species of CRATEROCEPHALUS, a view which we provisionally adopt as this memoir passes through the press.

75. **Craterocephalus nouhuysi** (Weber), 1910.

ATHERINICHTHYS NOUHUYSI Weber, *Notes Leyden Mus.*, 32, 229, 1910; *Nova Guinea*, 9, 555, fig. 26, 1913; Regan, *Trans. Zool. Soc. London*, 20, 276, 1914.
Type-locality.—Lorentz River, New Guinea.
Range.—Streams of northern New Guinea.

76. **Craterocephalus esox** (Klunzinger), 1872.

ATHERINICHTHYS ESOX Klunzinger, *Arch. Naturg.*, 38, 34, 1872; *Sitsb. Akad. Wiss. Wien*, 80, 394, 1880.
Type-locality.—Port Philip, Australia.
Range.—Known only from the type-locality.

77. **Craterocephalus jacksonianus** (Quoy and Gaimard), 1824.

ATHERINA JACKSONIANA Quoy and Gaimard, *Voy. Uranie, Zool.*, 333, 1824; Cuvier and Valenciennes, *Hist. Nat. Poiss.*, 10, 461, 1835.

ATHERINICHTHYS JACKSONIANA Günther, *Catalogue Fishes Brit. Mus.* **3**, 402, 1861.
CHIROSTOMA JACKSONIANA Waite, *Mem. N. S. Wales Nat. Club,* **2**, 21, 1904.
Type-locality.—Port Jackson, New South Wales.
Range.—Shores (or streams) of eastern Australia and Tasmania (Günther).

XIX. ISO Jordan and Starks, 1906.

TROPIDOSTETHUS Ogilby, *Proc. Linn. Soc. N. S. Wales,* **20**, 322, 1895; Waite, *Rec. Austral. Mus.,* **5**, 234, 1904 (preoccupied by TROPIDOSTETHUS Phillippi, 1863).
Haplotype.—TROPIDOSTETHUS RHOTHOPHILUS Ogilby.
Iso Jordan and Starks, *Proc. U. S. Nat. Mus.,* **24**, 204, 1901.
Haplotype.—Iso FLOS-MARIS Jordan and Starks.
Range.—Surf of Japan and Australia.

This genus is the most specialized in the subfamily. It is an obvious derivative of ATHERINA, however. From that genus it differs in the following respects: the sharply compressed body, deep at the shoulder and contracted to a fleshy keel along the edge of the belly; the deep, short head, truncated posteriorly; the long anal fin, of 23 to 27 rays; the support of the juncture of the pubic bone with the ventral fin by a strengthened rib; the increased width of the lateral band, and especially the absence of scales on the head and the fore-part of the trunk dorsally and ventrally.

78. **Iso rhothophilus** (Ogilby), 1895.$^{St.}$

TROPIDOSTETHUS RHOTHOPHILUS Ogilby, *Proc. Linn. Soc. N. S. Wales,* **20**, 322, 1895; Waite, *Rec. Austral. Mus.,* **5**, 234, pl. 25, fig. 2, 1904.
Iso RHOTHOPHILUS Waite, *Mem. N. S. Wales Nat. Club,* **2**, 21, 1904.
Type-locality.—Maroubra Bay, between Port Jackson and Botany Heads, near Sydney, Australia.
Range.—Surf of the eastern Australian shore.

79. **Iso flos-maris** Jordan and Starks, 1901.$^{St.}$

(Plate III, Fig. 10)

Iso FLOS-MARIS Jordan and Starks, *Proc. U. S. Nat. Mus.,* **24**, 205, fig. 4, 1901.
Type-locality.—Enoshima, Misaki, Hada, Yoga and Hashigo, Japan.
Range.—Shores of southern Japan, in the surf.

Upon comparison of typical material, we find that Iso FLOS-MARIS is quite distinct from the Australian species. It differs in the more slender body, the depth being contained 4.2 to 5.0 instead of 3.5 to 4.0 times in the length without caudal; in the less anterior position of the anus, which is a little nearer the base of the caudal than the tip of the snout, rather than the reverse; in the consequently longer abdominal region, with a higher percentage of the vertebræ abdominal (vertebræ 18 + 25 in Iso FLOS-MARIS, 15 + 28 or 29 in Iso RHOTHOPHILUS); in the smaller size of the scales, as indicated in the published figures of the two species, and in the wider lateral band, which is separated by one-half or two-thirds, instead of its entire, width, from the origin of the anal fin (in two paratypes of I. FLOS-MARIS from Hashigo, however, the lateral band is no wider than in I. RHOTHOPHILUS). These marked differences being less striking than the numerous points of resemblance between them, we retain these two remarkable atherines in the same genus.

79. **Iso natalensis** Regan.

ISO NATALENSIS Regan, *Ann. Durban Mus.*, **2**, 200, 1919. (Durban, Natal.)

Subfamily ATHERINOPSINÆ Fowler.

ATHERININÆ Fowler, *Proc. Acad. Nat. Sci. Phila.*, **40**, 727, 1904 (in part).
ATHERINOPSINÆ Fowler, *l. c.*, 737.

This large subfamily is restricted to the two shores of America, and includes all of the American species of the family, excepting a few of ATHERINA and HEPSETIA. Several of the genera are largely or wholly composed of fresh-water species.

Excepting the lack of vomerine teeth, the genus MENIDIA, especially the subgenus ISCHNOMEMBRAS, possesses all of the characters which one would postulate the ancestral type of this group to have. This point is emphasized in the analytical key to the genera. From some MENIDIA-like form several distinct lines of evolution may be traced to aberrant genera. THYRINA, ARCHOMENIDIA, and CHIROSTOMA, Mexican fresh-water genera, are derivable from such a fish. THYRINOPS, considerably resembling THYRINA, leads to the aberrant ATHERINELLA; the remarkable genus EURYSTOLE, convergent toward the unrelated genus ISO of the ATHERININÆ, also shows points of resemblance to THYRINA. HUBBESIA and MEMBRAS, and also LEURESTHES and even LABIDESTHES, are other modifications of the MENIDIA type. From MENIDIA likewise, the large species of temperate South America, belonging to AUSTROMENIDIA and related genera, have doubtless been derived. The highly peculiar fresh-water XENATHERINA was apparently also derived from a fish like MENIDIA or THYRINA, but the intermediate stages are unknown, and probably extinct. The other genera of the group agree in having the premaxillaries non-protractile; they form the subfamily ATHERINOPSINÆ as defined by Fowler. We are not certain, however, that the North American genera of this type, namely ATHERINOPSIS and ATHERINOPS, have had acommon origin with those of South America (BASILICHTHYS). It is fully evident, however, that all belong to the MENIDIA group of genera. For this entire group we use the only subfamily name that has been proposed—ATHERINOPSINÆ.

We are unable to place generically two American species, the descriptions being incomplete and probably inaccurate in detail. ATHERINA MICROPS Poey [13] from Cuba was accepted as a true ATHERINA by

---

[13] *Mem. Hist. Nat. Cuba*, **2**, 266, 1861.

Jordan and Evermann.[16] This disposition of the species, however, is excluded by Poey's statement that the anus is quite close to the anal fin. This character, as well as the small size of the mouth and the fin-formula, indicates that the species should be placed in the ATHERINOPSINÆ, but in what particular genus, the description does not indicate. The other species we fail to locate generically is ATHERINA INCISA Jenyns,[17] from the east coast of South America (39° S., 61° W.).

XX. MENIDIA Bonaparte, 1837.

MENIDIA Bonaparte, *Fauna Italica,* 1837,[18] fasc. 91; no pagination; Jordan and Gilbert, *Bull. U. S. Nat. Mus.,* 16, 406, 1883; Jordan and Evermann, *ibid.,* 47, pt. 1, 796, 1896; Kendall, *Rept. U. S. Fish Comm.,* 241, 1901 (1902); Jordan, *Copeia,* No. 32, 47, 1916.

Logotype.—ATHERINA MENIDIA Linnæus (by tautonomy).

ARGYREA DeKay, *New York Fauna,* 4, 141, 1842 (preoccupied).

Logotype.—ATHERINA NOTATA Mitchill.

ISCHNOMEMBRAS Fowler, *Proc. Acad. Nat. Sci. Phila.,* 40, 730, 1904; Fowler, *ibid.,* 56, 256, 1919.

Orthotype.—ISCHNOMEMBRAS GABUNENSIS Fowler (= MENIDIA BERYLLINA (Cope)).

PHOXARGYREA Fowler, *l. c.,* 732.

Orthotype.—PHOXARGYREA DAYI Fowler (= MENIDIA MENIDIA NOTATA Mitchill).

Range.—Atlantic coast and coastwise streams from southern Canada to Florida and Louisiana; Gulf of California.

In restricted sense, MENIDIA may be defined as follows. Premaxillaries widely dilated posteriorly, not bound to snout by frenum; gape arched, restricted by fold of membrane between jaws; mouth not low, its front on a level with middle of eye; mouth moderate in size, the maxillary reaching nearly to front of eye; jaws equal, not produced into a beak; lower jaw only moderately oblique, its posterior end not strongly entering profile of head; teeth in two irregular series or a narrow band on the jaws, those of the inner premaxillary series and the outer mandibular series moderately enlarged. Body cavity rounded posteriorly, the air bladder not extended backward beyond vertical from origin of anal fin; anus normally located immediately before anal fin. Body slender, with both dorsal and ventral contours rather evenly curved; trunk in cross-section not cuneate, the belly being broadly rounded; head more or less compressed. Scales large, in 36 to 56 series; scale margins strictly entire; apical radii numerous and very fine, or obsolete, circuli developed on exposed field of scales. Dorsal and anal fins wholly scaleless. First dorsal origin before or over origin of anal fin; second dorsal beginning a little before middle of anal base; anal fin beginning well before middle of length of body, excluding head and caudal fin; pectoral shorter than head, reaching past vertical from the insertion of ventral, which is as far from, or slightly farther from, the upper angle of the pectoral base than from the origin of the anal. Fishes of small size, attaining a length of three to six inches.

---

[16] *Bull. U. S. Nat. Mus.,* 47, pt. 1, 791, 1896.

[17] ATHERINA INCISA Jenyns, *Zool. Beagle,* 4 *(Fish),* 77, pl. 16, fig. 2, 1842 (not of Kner). ATHERINICHTHYS INCISA Günther, *Catalogue Fishes Brit. Mus.,* 3, 405, 1861.

[18] Troschel (*Archiv Naturgeschichte,* 1838) gives 1837 as the date of Bonaparte's account of Atherine fishes.

Subgenus ISCHNOMEMBRAS Fowler.

80. Menidia beryllina (Cope), 1866.$^{St.}$

? ATHERINICHTHYS GRACILIS Günther, *Catalogue Fishes Brit. Mus.*, 3, 405, 1861.
MENIDIA GRACILIS Jordan and Evermann, *Bull. U. S. Nat. Mus.*, 47, pt. 1, 797, 1896.
CHIROSTOMA BERYLLINUM Cope, *Trans. Amer. Phil. Soc.*, 403, 1866.

This small MENIDIA of the east coast of the United States has been regarded as representing ATHERINICHTHYS GRACILIS Günther, but the inadequate description of that species, based upon a young specimen without data, does not conform with BERYLLINA. Until further evidence is forthcoming, therefore, we shall follow Kendall in not applying Günther's name to this species.

MENIDIA BERYLLINA, as we accept the species, is composed of two subspecies, the extremes of which are of very dissimilar appearance, though of similar technical characters. The one, PENINSULÆ, occurs in salt water along the coast of Florida and the Gulf States. It has a comparatively deep and strongly compressed body, with the ventral contour more strongly arched than the dorsal and a large head with a rather small eye and a sharp snout. The other form, BERYLLINA, is abundant along the coast and coastwise streams of the Atlantic seaboard of the United States, and also in the fresh waters of Florida and the lower Mississippi Valley. The two intergrade in Florida, according to Kendall, but the inter-relationships of the two forms are yet to be accurately determined. Perhaps they are specifically distinct.

80a. Menidia beryllina peninsulæ (Goode and Bean), 1879.$^{St.}$

(Plate III, Fig. 11)

CHIROSTOMA PENINSULÆ Goode and Bean, *Proc. U. S. Nat. Mus.*, 2, 148, 150, 1879 (exclusive of specimens from Lake Monroe).
MENIDIA PENINSULÆ Jordan and Gilbert, *Proc. U. S. Nat. Mus.*, 5, 266, 1882; *Bull. U. S. Nat. Mus.*, 16, 408, 1883; Jordan and Evermann, *Bull. U. S. Nat. Mus.*, 47, pt. 1, 797, 1896; 4, pl. 124, fig. 337, 1900 (figure poor); Kendall, *Rept. U. S. Fish Comm.*, 64, 1899; 257, 1901 (1902), text fig.; Cockerell, *Proc. Biol. Soc. Wash.*, 23, 48, 1910.
Type-locality.—Pensacola, Florida.

Range.—Coasts of Florida and the Gulf States, so far as known confined to salt water.

The description and figures of Kendall indicate very well the distinctive features of this form. Among other specimens form Florida in the Field Museum, those from Punta Rossa, Boca Grande, Fort Myers, and Captive Pass may be placed on record.

80b. Menidia beryllina beryllina (Cope), 1866.$^{St.}$

(Plate III, Fig. 12)

CHIROSTOMA BERYLLINUM Cope, *Trans. Amer. Phil. Soc.*, 403, 1866.

MENIDIA BERYLLINA Jordan and Gilbert, *Bull. U. S. Nat. Mus.*, **16**, 408, 1883; Kendall, *Rept. U. S. Fish. Comm.*, 260, 1901 (1902), text figure.

MENIDIA GRACILIS BERYLLINA Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **47**, pt. 1, 797, 1896; **4**, pl. 124, fig. 338, 1900 (figure rather poor). (Also of various authors in local lists).

Type-locality.—Potomac River, near Washington.

MENIDIA GRACILIS Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **47**, pt. 1, 797, 1896 (apparently not ATHERINICHTHYS GRACILIS Günther).

MENIDIA AUDENS Hay, *Bull. U. S. Fish Comm.*, **2**, 64, 1882; Jordan and Gilbert, *Bull. U. S. Nat. Mus.*, **16**, 908, 1883; Jordan and Evermann, *ibid.*, **47**, pt. 1, 798, 1896; Kendall, *Rept. U. S. Fish Comm.*, 259, 1901 (1902); Nichols, *Bull. Amer. Mus. Nat. Hist*, **30**, 276, 1911.

Type-locality.—Memphis, on the lower Mississippi River (now definitely restricted).

MENIDIA PENINSULÆ ATRIMENTIS Kendall, *Rept. U. S. Fish Comm.*, 258, 1901 (1902), text figure.

Type-locality.—South Lake, Titusville, Florida.

MENIDIA BERYLLINA CEREA Kendall, *l. c.*, 261, text figure; Fowler, *Ann. Rept. New Jersey State Mus.*, 215, 1905 (1906); 288, 1906 (1907), text figure; Smith, *N. Car. Geol. Econ. Surv.*, **2**, 177, fig. 70, 1907.

Type-locality.—Waquoit Bay, Massachusetts.

ISCHNOMEMBRAS GABUNENSIS Fowler, *Proc. Acad. Nat. Sci. Phila.*, **40**, 731, pl. 42, 1904, upper figure.

ATHERINA GABONENSIS Boulenger, *Ann. Mag. Nat. Hist.* (7), **16**, 52, 1906; *Catalogue Fresh-water Fishes Africa*, **4**, 76, 1916.

Type-locality.—"Gabun River, Gabun Country, West Africa" (presumably an error).

Range.—Coast and coastwise streams from New England to South Carolina; fresh waters of Florida ("ATRIMENTIS") and the lower Mississippi Valley ("AUDENS").

After carefully comparing the paratype of ISCHNOMEMBRAS GABUNENSIS, stated to have been taken in West Africa, with specimens of M. B. BERYLLINA, we have come to the conclusion that the two are identical. The type-locality of ISCHONOMEMBRAS GABUNENSIS is very probably incorrect. Dr. Boulenger's reference of GABUNENSIS to ATHERINA, as well as his altering of the spelling of the word was, of course, unjustified.

Mr. Nichols in 1911 compared specimens of a MENIDIA from Moon Lake, Mississippi, with examples of MENIDIA "GRACILIS" from Long Island. Being unable to detect specific differences, he regarded AUDENS as a synonym of GRACILIS (=BERYLLINA). Similarly we are unable to distinguish clearly between paratypes of ATRIMENTIS from Lake Monroe, Florida, and a specimen of BERYLLINA from Noank, Connecticut. In both lots the eye is scarcely longer than the snout, and the base of the anal fin is a little shorter than the head. Specimens from Brown's Creek, Long Island, supposedly typical of M. B. CEREA, also have the anal shorter than the head.

MENIDIA BERYLLINA BERYLLINA typically differs from M. B. PENINSULÆ in the more slender, more nearly terete body; in the shorter, blunter snout; in the somewhat longer anal fin, and in the waxy, rather than greenish, color. The color of PENINSULÆ does not appear to be constant, and in the form of the head and snout the extreme type CEREA of the New England coast grades into (or at least toward) PENINSULÆ through typical BERYLLINA of the fresh waters of the Middle Atlantic States, and ATRIMENTIS of the fresh waters of Florida.

Subgenus MENIDIA Bonaparte.

81. **Menidia sardina** (Jenkins and Evermann), 1888.

ATHERINA SARDINA Jenkins and Evermann, *Proc. U. S. Nat. Mus.*, 11, 137, 1888 (1889).

MENIDIA SARDINA Evermann and Jenkins, *ibid.*, 14, 136, 1891; Jordan and Evermann, *Bull. U. S. Nat. Mus.*, 47, pt. 1, 799, 1896.

Type-locality.—Guaymas, Sonora.

Range.—Gulf of California.

This species seems to be the Pacific analogue of MENIDIA M. NOTATA.

82. **Menidia clara** Evermann and Jenkins, 1891.

MENIDIA CLARA Evermann and Jenkins, *Proc. U. S. Nat. Mus.*, 14, 136, 1891; Jordan and Evermann, *Bull. U. S. Nat. Mus.*, 47, pt. 1, 801, 1896.

Type-locality.—Guaymas, Sonora.

Range.—Gulf of California.

In the reduced size of the teeth and of the scales, this species seems to approach LEURESTHES. It should perhaps be made the type of a distinct subgenus or genus.

83. **Menidia menidia** (Linnæus), 1766.$^{St.}$

Jordan and Evermann,[19] Kendall,[20] Nichols,[21] Smith,[22] and Hubbs[23] have demonstrated that this species comprises two intergrading subspecies, MENIDIA and NOTATA. The intergrades appear like hybrids, in that they frequently possess characters of both forms combined in a single individual.

---

[19] *Bull. U. S. Nat. Mus.*, 47, pt. 3, 2840, 1898.

[20] *Rept. U. S. Fish Comm.*, 261-267, 1901 (1902).

[21] *Amer. Nat.*, 42, 731, 1908.

[22] *N. Car. Geol. Econ. Surv.*, 2, 176, 1907.

[23] *Bull. Mus. Nat. Hist.*, 38, 415, 1918 (footnote).

The Field Museum has material of M. MENIDIA MENIDIA from South Carolina; intergrades between MENIDIA and NOTATA from Beaufort, North Carolina, from Ocean View, Virginia, and Ocean City, New Jersey, and examples of M. MENIDIA NOTATA from off Swan River, Long Island, from Noank, Connecticut, and from Woods Hole and Waquoit Bay, Massachusetts.

83a. Menidia menidia notata (Mitchill), 1815.$^{St.}$

(Plate IV, Fig. 14.)

ATHERINA NOTATA Mitchill, *Trans. Lit. Phil. Soc. New York*, **1**, 446, 1815; De Kay, *New York Fauna*, **4**, 141, pl. 28, fig. 88, 1842.

Type-locality.—New York.

ATHERINOPSIS NOTATUS Baird, *Ann. Rept. Smiths. Inst.*, 338, 1854.

ATHERINICHTHYS NOTATA Günther, *Catalogue Fishes Brit. Mus.*, **3**, 406, 1861.

ARGYREA NOTATA Abbott, *Geol. N. Jer.*, 816, 1868.

MENIDIA NOTATA Jordan and Gilbert, *Bull. U. S. Nat. Mus.*, **16**, 407, 1883; Jordan and Evermann, *ibid.*, **47**, pt. 1, 800, 18906.

MENIDIA MENIDIA NOTATA Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **47**, pt. 3, 2840, 1898; Kendall, *Rept. U. S. Fish Comm.*, 262-267, 1901 (1902), text figure; Fowler, *Rept. N. Jer. State Mus.*, 216, 1905 (1906), text figure; 289, 1906 (1907).

Type-locality.—New York.

ATHERINA VIRIDESCENS Mitchill, *Trans. Lit. Phil. Soc. New York*, **1**, 447, 1815.

Type-locality.—New York, New York.

PHOXARGYREA DAYI Fowler, *Proc. Acad. Nat. Sci. Phila.*, **40**, 732, pl. 41, 1904, lower figure.

Type-locality.—India (doubtless by error).

Range.—Coast of eastern North America from Nova Scotia to Cape May, intergrading southward with M. M. MENIDIA.

83b. Menidia menidia menidia (Linnæus), 1766.$^{St.}$

We find no reason to doubt that PHOXARGYREA is identical with MENIDIA. As the entire MENIDIA group of genera (the ATHERINOPSINÆ) is American, we are led to believe that the label with the type of PHOXARGYREA, reading "R. Coates, India," has been transferred accidentally from some other specimen. The description of P. DAYI, in fact, fits young examples of M. M. NOTATA in all important specific characters.

ATHERINA MENIDIA Linnæus, *Syst. Nat.*, ed. 12, **1**, 519, 1766; Lacépède, *Hist Nat. Poiss.*, **5**, 371.

ATHERINICHTHYS MENIDIA Günther, *Catalogue Fishes Brit. Mus.*, **3**, 406, 1861.

CHIROSTOMA MENIDIUM Jordan and Gilbert, *Proc. U. S. Nat. Mus.*, **1**, 383, 1878 (in part).

MENIDIA MENIDIA Jordan and Evermann, *Bull U. S. Nat. Mus.*, **47**, pt. 1, 800, 1896.

MENIDIA MENIDIA MENIDIA Kendall, *Rept. U. S. Fish Comm.*, 262-267, 1901 (1902) text figure.

Type-locality.—Charleston, South Carolina.

ATHERINA BOSCII Cuvier and Valenciennes, *Hist. Nat. Poiss.*, 10, 465, 1835; Jordan, *Proc. U. S. Nat. Mus.*, 9, 530, 1886.

MENIDIA BOSCI Jordan and Gilbert, *Bull U. S. Nat. Mus.*, 16, 407, 1883 (synonymy only).

Type-locality.—Charleston.

MENIDIA DENTEX Goode and Bean, *Proc. U. S. Nat. Mus.*, 5, 429, 1882.

Type-locality.—Mouth of St. John's River, Florida.

MENIDIA BRASILIENSIS Jordan and Gilbert, *Bull. U. S. Nat. Mus.*, 16, 408, 1883 (exclusive of synonymy).

Range.—Coast of Florida and South Carolina, intergrading northward with M. M. NOTATA.

XXI. ARCHOMENIDIA Jordan and Hubbs, 1919.

ARCHOMENIDIA Jordan and Hubbs, new genus.

Orthotype.—ATHERINICHTHYS SALLEI Regan.

Range.—East coast streams of Mexico.

ARCHOMENIDIA agrees with the diagnosis of MENIDIA given above in all respects but the following. Anus advanced in position, located midway between insertion of ventral fin and origin of anal fin; air bladder extended backward to beyond middle of base of anal fin. Gape very strongly arched; lower jaw included; teeth in two series in both jaws, those of the outer premaxillary series enlarged, becoming canine-like anteriorly, and directed forward and downward. Circuli obsolete on exposed field of scales. In some respects ARCHOMENIDIA approaches THYRINA more closely than MENIDIA. It differs from that genus in the position of the anus; in the more backward extension of the air bladder, and in details of fin, mouth, and teeth characters.

84. Archomenidia sallei (Regan), 1903.$^{St.}$

ATHERINICHTHYS BRASILIENSIS Günther, *Catalogue Fishes Brit. Mus.*, 3, 404, 1861 (the specimen from Mexico only, subsequently described by Regan as A. SALLEI).

ATHERINICHTHYS SALLEI Regan, *Proc. Zool. Soc. London*, pt. 2, 60, 1903.

MENIDIA SALLEI Meek, *Publ. Field Mus. (Zool.)* 5, 181, 1904 (after Regan).

Type-locality.—"Mexico."

MENIDIA LISA Meek, *ibid.*, 182 (specimens from El Hule only).

Range.—East coast streams of central Mexico.

The history of this species has been largely that of a single specimen, collected by Sallé in Mexico. It was first recorded by Günther as ATHERINICHTHYS BRASILIENSIS (a record which has caused considerable confusion in the literature), and finally described as a new species, SALLEI, by Regan, under the obsolete generic name ATHERINICHTHYS. Dr. Meek referred SALLEI to MENIDIA, but failed to note that his specimens from El Hule, Vera Cruz, Mexico, were different from the type of his MENIDIA LISA. There is at hand a series from the Rio Hueyapam, at the village of San Juan, Acayucan, Mexico, collected by A. G. Ruthven and H. B. Baker July 23, 1910. This material fixes the hitherto imperfectly known habitat of this species as the east coast streams of central Mexico, and makes possible a supplementary description of the species (based upon seven specimens 41 to 55 mm. long to caudal).

Body rather slender and moderately compressed, resembling that of MENIDIA M. MENIDIA in lateral aspect, except that the anterodorsal contour is more nearly horizontal; belly broadly rounded anteroventrally; greatest depth contained 4.9 to 5.3 times in total length to caudal; least depth of caudal peduncle 2.8 to 3.0 times in length of head (including the opercular membrane). Length of head contained from 4.0 to 4.3 times in the length to caudal; head a little less than half as broad as long, and not quite so broad as deep. Length of orbit a little greater than the width of the slightly convex interorbital, notably greater than length of snout, slightly greater than postorbital length of head, and contained 2.6 to 2.7 times in head. Premaxillary widely dilated posteriorly; the strongly oblique maxillary extended backward not quite to below the anterior orbital margin; the tip of the lower jaw included; the gape very strongly arched, the physiognomy approaching that of CYNOLEBIAS (PŒCILIIDÆ). Teeth of the outer of the two rows in both jaws decidedly stronger and more regularly arranged than those of the inner series; the outer premaxillary teeth exposed, and visible from above when the mouth is closed, they being directed outward as well as downward; those toward the front of the premaxillaries becoming strongly curved canines.

Anus advanced in position, as in no other known species of the subfamily, located about midway between the insertion of the ventral fin and the origin of the anal, nearer tip of snout than caudal base. Ventral insertion equidistant from anal fin and from head; origin of the anal a little more distant from the tip of the snout than from the end of the middle caudal rays; origin of the first dorsal over, slightly before, or slightly behind the anal origin; distance between the origins of the two dorsals considerably less than twice the length of the first dorsal when depressed, longer than the base of the second dorsal, and about as long as head behind middle of eye; second dorsal beginning over middle of anal base, higher than long, falcate like the anal; anterior and highest anal rays as high as the body; length of anal base a little greater than length of head; the ventrals when folded together concealing the anus, but not reaching the anal. Fin rays; dorsal, IV or V—I, 9 or I, 10; anal, I, 18 to I, 20.

Scales in 40 to 42 series from branchial aperture to end of hypural. in 10 series (8 main rows) above anal origin; in 7 series between origins of dorsal fins. Scale margins evenly rounded or broadly and shallowly undulate, not crenate; radii and circuli obsolete on exposed field of scales.

Coloration of preserved specimens moderately dark, with a silvery lateral band about as wide as a scale, and disappearing anteriorly. Tips of vertical fins dark.

XXII. HUBBESIA Jordan, 1919.

HUBBESIA Jordan, *Proc. U. S. Nat. Mus.*, 310, 1919.
Orthotype.—MENIDIA GILBERTI Jordan and Bollman.
Range.—Tropical Pacific, in the Panama region.

This well marked genus includes a single species, related most closely to those of MENIDIA and MEMBRAS. Like THYRINOPS of the same region, its scales are sculptured by apical radii, but in that genus the radii are much finer and more numerous.

85. Hubbesia gilberti (Jordan and Bollman), 1889.$^{St.}$

(Plate IV, Fig. 15)

MENIDIA GILBERTI Jordan and Bollman, *Proc. U. S. Nat. Mus.*, **12**, 155, 1889; Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **47**, pt. 1, 798, 1896.
KIRTLANDIA GILBERTI Gilbert and Starks, *Mem. Cal. Acad. Sci.*, **4**, 58, 1904.
HUBBESIA GILBERTI, Jordan, *l. c.*, **55**, 310, fig. 2.
Type-locality.—Panama.
Range.—Panama Bay.

XXIII. MEMBRAS Bonaparte, 1837.

MEMBRAS Bonaparte, *Fauna Italica*, 1837, fasc. 91, no pagination; Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **47**, pt. 1, 789, 1896 (MEMBRAS referred to ATHERINA); Jordan, *Copeia*, No. 32, 47, 1916 (ATHERINA MOCHON incorrectly designated as type of genus).
Orthotype.—ATHERINA MARTINICA Cuvier and Valenciennes (by reference).
KIRTLANDIA Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **47**, pt. 1, 794, 1896.
Orthotype.—CHIROSTOMA VAGRANS Goode and Bean.
Range.—Tropical Atlantic shores of America, north to New York.

The genus MEMBRAS was defined by Bonaparte, but without mention of a type in connection with the description. In referring MEMBRAS to ATHERINA, Jordan and Evermann overlooked the fact that farther on in the same work Bonaparte explained that the two genera, MENIDIA and MEMBRAS, were based on exotic species and that they corresponded to two sections of ATHERINA, indicated but not named by Valenciennes. MEMBRAS, therefore, rests on a species allied to our genus KIRTLANDIA, which name it may be taken to replace. Our notes on the type of ATHERINA MARTINICA in Paris indicate that its fins are naked. It is therefore possible that the genus KIRTLANDIA, characterized by its scaly fins, may be distinct from MEMBRAS. These scales on the fins are deciduous, however, and may have been present originally on the type of A. MARTINICA.

86. **Membras martinicus** Cuvier and Valenciennes, 1835.

ATHERINA MARTINICA Cuvier and Valenciennes, *Hist. Nat. Poiss.*, **10**, 459, 1835.

MENIDIA MARTINICA Jordan, *Proc. U. S. Nat. Mus.* **9**, 530, 1886 (redescription of type).

KIRTLANDIA MARTINICA Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **47**, pt. 1, 795, 1896.

Type-locality.—Martinique.

Range.—Known only from the type locality.

This species is known only from the original types.

87. **Membras vagrans vagrans** (Goode and Bean), 1879.St.

(Plate IV, Fig. 16)

CHIROSTOMA VAGRANS Goode and Bean, *Proc. U. S. Nat. Mus.*, **2**, 148, 1879,

MENIDIA VAGRANS Jordan and Gilbert, *ibid.*, **5**, 267, 1882; *Bull. U. S. Nat. Mus.*, **16**, 407, 1883 (in part).

KIRTLANDIA VAGRANS Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **47**, pt. 1, 794; **4**, pl. 124, fig. 336, 1900 (figure inaccurate in certain details).

Type-locality.—Pensacola, Florida.

Range.—Gulf Coast of the United States, south to Tampico, Mexico.

Soft rays of second dorsal, 7 to 9; pectoral fins a little longer or a little shorter than head.

87a. **Membras vagrans laciniatus** (Swain), 1883.St.

CHIROSTOMA MENIDIUM Jordan and Gilbert, *Proc. U. S. Nat. Mus.*, **1**, 383, 1878 (in part).

MENIDIA BOSCI Jordan and Gilbert, *Bull. U. S. Nat. Mus.*, **16**, 407, 1883 (exclusive of references).

MENIDIA VAGRANS Jordan and Gilbert, *l. c.*, 407 (in part).

KIRTLANDIA VAGRANS Smith, *N. Car. Geol. Econ. Surv.*, **2**, 178, 1907.

MENIDIA VAGRANS LACINIATA Swain, in Jordan and Gilbert, *Bull. U. S. Nat. Mus.*, **16**, 908, 1883.

MENIDIA LACINIATA Jordan and Gilbert, *Proc. U. S. Nat. Mus.*, **5**, 589, 1882 (1883).

KIRTLANDIA LACINIATA Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **47**, pt. 1, 795, 1896; Cockerell, *Proc. Biol. Soc. Wash.*, **23**, 47, 1910.

KIRTLANDIA VAGRANS LACINIATA Fowler, *Ann. Rept. New Jersey State Mus.*, 213, 1905 (1906); 392, pl. 95, 1906 (1907).

Type-locality.—Coast of North Carolina (fixed as Beaufort, North Carolina, by Jordan and Evermann).

Range.—Atlantic coast of United States, from New York to South Carolina.

Dr. Hugh M. Smith in 1907 questioned the validity of LACINIATA, referring that form to the synonymy of VAGRANS. He does not state the evidence which led him to this conclusion, and we are unable to agree with him. In several specimens from the Rio Panuco at Tampico, Mexico, the scale rows vary from 42 to 45; in five from Cedar Keys, Florida, they vary from 45 to 47; in nine from Ocean View, Virginia, from 48 to 50; in five from Carson's Inlet, New Jersey, from 47 to 50. In the same lots the soft anal rays vary as follows:

Locality	Subspecies	Anal rays 15	16	17	18	19	20	21
Tampico, Mexico	VAGRANS	2	4	4	—	—	—	—
Cedar Keys, Florida	INTERGRADES	—	1	3	5	—	—	—
Ocean View, Virginia	LACINIATUS	—	—	—	2	1	3	3
Corson's Inlet, New Jersey	LACINIATUS	—	—	—	—	2	2	1

In a series of VAGRANS from Galveston, Texas, Jordan and Gilbert counted 14 to 17 soft anal rays. These figures indicate that VAGRANS and LACINIATUS intergrade, and should be regarded as subspecies.

XXIV. THYRINA Jordan and Culver, 1895.

THYRINA Jordan and Culver, *Proc. Cal. Acad. Sci.*, (2), 5, 418, 1895; Jordan and Evermann, *Bull. U. S. Nat. Mus.*, 47, pt. 1, 803, 1896; Regan, *Biol. Centr.-Amer., Pisces*, 63, 1907.

Orthotype.—THYRINA EVERMANNI Jordan and Culver.

MELANIRIS Meek, *Publ. Field Mus.* (*Zool.*), 3, 117, 1902.

Orthotype.—MELANIRIS BALSANUS Meek.

Range.—Coastwise districts from western Mexico (exclusive of the Rio Lerma system) and Central America, south to Colombia and Rio de Janeiro, Brazil; chiefly in fresh water.

THYRINA is very close to MENIDIA, which it represents in the regions named above. It differs from MENIDIA, as described in this paper, in several respects. Trunk region shortened, and sharply compressed ventrally, subcuneate in cross section; air-bladder extended backward into the urosome, as a widely rounded diverticulum, over the first third of the anal base, and visible through the translucent body wall. Lower jaw included; premaxillary teeth heterodont, the inner teeth in a narrow band or irregular series; the outer teeth uniserially arranged, and somewhat enlarged (less enlarged than in ARCHOMENIDIA, and not directed outward). Anterodorsal contour of body nearly straight, and nearly parallel with the posterodorsal contour, the form of the body resembling that of GAMBUSIA. Pectoral fin falcate, usually longer than head; first dorsal origin well behind origin of anal fin; anal base longer than head. Circuli as well as radii obsolescent on exposed field of scales; scale-margins frequently crenate, particularly on the back.

It seems almost certain to us that Mr. Regan has unduly reduced the number of species of THYRINA. After having examined all of the described species except GUATEMALENSIS, we are disposed to accept all as valid.

88. Thyrina meeki Miller, 1907.$^{St.}$

THYRINA MEEKI Miller, *Bull. Amer. Mus. Nat. Hist.*, 23, 110, fig. 2, 1907; Meek, *Publ. Field Mus.* (*Zool.*), 7, 139, 1907.

Type-locality.—Rio Motagua, at Gualan, Guatemala.

Range.—Motagua River and tributaries, on the Atlantic slope of Guatemala.

This species may be recognized at sight by its long snout. The upper margin of the rami of the mandibles is curved upward anteriorly, and but little elevated posteriorly.

89. **Thyrina chagresi** (Meek and Hildebrand), 1914.St.

MENIDIA CHAGRESI Meek and Hildebrand, *Publ. Field Mus. (Zool.)*, 10, 119, 1914.
Type-locality.—Gorgona, Panama Canal Zone.
Range.—Streams of the Atlantic drainage of Panama and Costa Rica.

This species is a true THYRINA, most closely related to T. MEEKI and T. BRASILIENSIS. It differs from MEEKI in its shorter snout and larger eye, and in the deeper base of the mandibular rami, and from BRASILIENSIS in the shorter head, more posterior first dorsal, more compressed belly, etc.

90. **Thyrina brasiliensis** (Quoy and Gaimard), 1824.St.

ATHERINA BRASILIENSIS Quoy and Gaimard, *Voy. Uranie, Poissons*, 332, 1824; Cuvier and Valenciennes, *Hist. Nat. Poiss.*, 10, 467, 1835.
ATHERINICHTHYS BRASILIENSIS Günther, *Catalogue Fishes Brit. Mus.*, 3, 404, 1861 (exclusive of Mexico record); Regan, *Proc. Zool. Soc. London*, 60, 1903.
[BASILICHTHYS] BRASILIENSIS Girard, *U. S. Nav. Astron. Exp.*, 2, 238, 1860.
MENIDIA BRASILIENSIS Jordan and Gilbert, *Bull. U. S. Nat. Mus.*, 16, 408, 1883 (reference only); Starks, *The Fishes of the Stanford Expedition to Brazil (Stanford University)*, 41, 1913; Ribeiro, *Rev. Mus. Pal.*, 10, 764, 1918; *Arch. Mus. Nac. Rio de Janeiro, 17, Trematolepides*, 12, 1915 (exclusive of Mexico record).
CHIROSTOMA BRASILIENSE Jordan and Evermann, *Bull. U. S. Nat. Mus.*, 47, pt. 1, 794, 1896.
Type-locality.—Rio de Janeiro, Brazil.
ATHERINA MACROPHTHALMA Agassiz, *Pisc. Brasil*, 136, pl. 47, fig. 1, 1829.
[BASILICHTHYS] MACROPHTHALMA Girard, *U. S. Nav. Astron. Exp.*, 2, 238, 1860.
Type-locality.—Rio de Janeiro, Brazil.
Range.—Salt and brackish waters of South America from Rio de Janeiro to Lake Maracaibo.

In this species the upper jaw is longer than the lower, being slightly hooked over it, and the outer premaxillary teeth are enlarged; the first dorsal origin lies slightly behind the vertical from the origin of the anal; the body is strongly compressed; the body cavity is broadly rounded posteriorly, and the air bladder is but slightly produced into the tail; the scales show bare traces of numerous fine apical radii and marginal crenulations; the eye is longer than the snout in the young, shorter than the snout in the adult. The largest specimen examined is a mature female 113 mm. long to caudal. Two specimens, 37 and 41 mm. long to caudal, the first to be recorded north of Brazil, were collected by Mr. W. H. Osgood in Lake Maracaibo, Venezuela.

91. **Thyrina sardina** (Meek), 1907.$^{St.}$

CHIROSTOMA GUATEMALENSIS Gill and Bransford, *Proc. Acad. Nat. Sci. Phila.*, 187, 1877.

THYRINA GUATEMALENSIS Fowler, *ibid.*, 40, 736, pl. 43, 1904, lower figure (apparently not ATHERINICHTHYS GUATEMALENSIS Günther).

MELANIRIS SARDINA Meek, *Publ. Field Mus., (Zool.)*, 7, 114, 1907.

THYRINA SARDINA Regan, *Biol. Centr.-Amer., Pisces*, 189, 1908.

Type-locality.—Lake Managua, Nicaragua.

Range.—Lakes Nicaragua and Managua, Nicaragua. /

THYRINA SARDINA has the mouth more oblique than the other species of the genus, and the rami of the lower jaw are much more elevated within the mouth, forming an apical angle which is scarcely obtuse.

If it should be found necessary to merge THYRINA with MENIDIA, then this species would require a new name, there being a prior MENIDIA SARDINA.

92. **Thyrina guatemalensis** (Günther), 1864.

ATHERINICHTHYS GUATEMALENSIS Günther, *Proc. Zool. Soc. London*, 151, 1864; *Trans. Zool. Soc. London*, 6, 443, 1869.

MENIDIA GUATEMALENSIS Jordan and Evermann, *Bull. U. S. Nat. Mus.*, 47, pt. 1, 801, 1896.

THYRINA GUATEMALENSIS Jordan and Evermann, *l. c.*, pt. 3, 2840, 1898; Regan, *Biol. Centr.-Amer., Pisces*, 64, 1907 (in part); *? Ann. Mag. Nat. Hist* (8), 12, 472, 1913 (Rio Condoto, Pacific slope of Colombia).

Type-locality.—Lakes of Huamuchal, Pacific slope of Guatemala.

Range.—Pacific slope of Guatemala, ? southward to Colombia.

93. **Thyrina balsana** (Meek), 1902.$^{St.}$

(Plate IV, Fig. 17)

MELANIRIS BALSANUS Meek, *Publ. Field Mus.* (*Zool.*), 3, 117, pl. 28, 1902; 5, 183, fig. 64, 1904; Jordan, *Guide to the Study of Fishes*, 2, 218, 1905.

(Plate V, Fig. 17)

Type-locality.—Rio Balsas, at Balsas, Guerrero, Mexico.

THYRINA GUATEMALENSIS Regan, *Biol. Centr.-Amer., Pisces*, 64, 1907 (in part).

Range.—Streams of the Balsas Basin, Mexico.

This species and SARDINA, which Dr. Meek referred to his genus MELANIRIS, agree with the type of THYRINA (EVERMANNI) in all essential respects. In both of these species the belly is apparently compressed as though pinched into that form, but the abdomen is distended with mature eggs in the specimens at hand.

T. BALSANA is very closely related to GUATEMALENSIS, EVERMANNI, and CRYSTALLINA. We have no specimens of GUATEMALENSIS at hand, and Günther's description is incomplete. The only point of difference apparent lies in the size of the scales: in ten paratypes of BALSANA there are 38 to 40—9 or 10 rows, while Günther counted 36-7 in GUATEMALENSIS. T. BALSANA differs from EVERMANNI in the less sharply compressed belly, in the somewhat shorter and less pointed and less falcate pectoral, and in the shorter anal fin; in EVERMANNI there are 22 to 25 soft anal rays; in twelve specimens of BALSANUS, 18 to 23. T. BALSANA is more closely related to CRYSTALLINA, but has the head usually longer, the depth less, the pectoral fin slightly shorter, and the eye smaller. Greatest depth of body in mature females, somewhat less than one-fifth the total length to caudal; head, 4.0 to 4.4 (4.3 to 4.5 in adults of CRYSTALLINA); pectoral as long as head, or slightly shorter or slightly longer; eye of adult, less than one-third length of head. There are either three or four spines in the first dorsal. The rami of the lower jaw are scarcely elevated posteriorly, and the gape of the mouth is little restricted posteriorly.

94. **Thyrina crystallina** Jordan and Culver, 1895.$^{St.}$

THYRINA CRYSTALLINA Jordan and Culver, *Proc. Cal. Acad. Sci.* (2), **5**, 420, 1895; Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **47**, pt. 1, 804, 1896; Meek, *Publ. Field Mus. (Zool.)*, **5**, 184, 1904.

Type-locality.—Lower course of the Rio Presidio, near Mazatlan.

THYRINA GUATEMALENSIS Regan, *Biol. Centr.-Amer., Pisces*, 64, 1907 (in part).

Range.—Fresh waters of the Rio Presidio (Rio Mazatlan), Mexico.

The characters regarded as diagnostic in the distinction of this species from EVERMANNI, though not wholly constant, are yet probably of taxonomic significance. For example, the soft anal rays in the types of CRYSTALLINA vary from 19 to 23, in the types of EVERMANNI from 22 to 25.

95. **Thyrina evermanni** Jordan and Culver, 1895.$^{St.}$

(Plate V, Fig. 18)

THYRINA EVERMANNI Jordan and Culver, *Proc. Cal. Acad. Sci.* (2), **5**, 419, pl. 33, 1895; Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **47**, pt. 1, 804, 1896; **4**, pl. 125, fig. 340, 1900; Meek, *Publ. Field Mus.* (*Zool.*), **5**, 184, 1904.

Type-locality.—Estuary of the Rio Presidio at Mazatlan, Mexico.

THYRINA GUATEMALENSIS Regan, *Biol. Centr.-Amer., Pisces*, 64, 1907 (in part).

Range.—Estuary of the Rio Presidio, Pacific slope of Mexico.

XXV. THYRINOPS Hubbs, 1918.

THYRINOPS Hubbs, *Proc. Acad. Nat. Sci. Phila.*, **69**, 306, 1918.

Orthotype.—ATHERINICHTHYS PACHYLEPIS Günther.

Range.—Shores of the Panamaic Province.

This genus contains a single known species, intermediate in most respects between THYRINA and ATHERINELLA, as indicated in the key to the genera. As in THYRINA, the air bladder, showing through the translucent flesh and scales, extends broadly backward a short distance into the urosome.

96. Thyrinops pachylepis (Günther), 1864.$^{St.}$

ATHERINICHTHYS PACHYLEPIS Günther, *Proc. Zool. Soc. London*, 25, 1864; *Trans. Zool. Soc. London*, 6, 443, 1869.

MENIDIA PACHYLEPIS Jordan and Evermann, *Bull. U. S. Nat. Mus.*, 47, pt. 1, 801, 1896.

[THYRINA] PACHYLEPIS Jordan and Evermann, *ibid.*, pt. 3, 2840, 1898.

KIRTLANDIA PACHYLEPIS Gilbert and Starks, *Mem. Cal. Acad. Sci.*, 4, 57, 1904; Starks, *Proc. U. S. Nat. Mus.*, 30, 783, 1906.

THYRINA PACHYLEPIS Regan, *Biol. Centr.-Amer., Pisces*, 64, 1907.

THYRINOPS PACHYLEPIS Hubbs, *Proc. Acad. Nat. Sci. Phila.*, 69, 307, 1918.

Type-locality.—Panama.

Range.—Costa Rica to Ecuador.

XXVI. ATHERINELLA Steindachner, 1875.

ATHERINELLA Steindachner, *Sitzb. Akad. Wiss. Wien*, 71, 477, 1875.

Orthotype.—ATHERINELLA PANAMENSIS Steindachner.

Range.—Panamaic Province.

ATHERINELLA is related to THYRINOPS and THYRINA, but is much more aberrant than either; in fact, it is one of the most aberrant genera of the ATHERINIDÆ, being characterized by extreme features. The belly throughout is carinate, not merely sharply compressed; the rami of the lower jaw are more elevated than in any other genus of the subfamily; the scales are strongly dentate; both dorsal fins are more posteriorly inserted than in any other member of the family; the first being over the middle of the anal base.

97. Atherinella panamensis Steindachner, 1875.$^{St.}$

ATHERINELLA PANAMENSIS Steindachner, *Sitzb. Akad. Wiss. Wein*, 71, 477, 1875; Jordan and Evermann, *Bull. U. S. Nat. Mus.*, 47, pt. 1, 805, 1896; Gilbert and Starks, *Mem. Cal. Acad. Sci.*, 4, 59, pl. 9, fig. 17, 1904.

Type-locality.—Panama.

Range.—Panama Bay.

XXVII. EURYSTOLE Jordan and Evermann, 1896.

EURYSTOLE Jordan and Evermann, *Bull. U. S. Nat. Mus.*, 47, pt. 1, 802, 1896.

Orthotype.—ATHERINELLA ERIARCHA Jordan and Gilbert.

Range.—Pacific shores of tropical America.

In its sharply compressed body, deep and abruptly truncated head, convex interorbital, and very wide lateral band, EURYSTOLE is remarkably convergent toward Iso, a genus of the ATHERININÆ inhabiting the western shores of the Pacific. In these characters, EURYSTOLE differs from all other genera of the subfamily ATHERINOPSINÆ to which it belongs. From all the ATHERINIDÆ it is distinguished by the development of a weak spine, closely appressed to the head, at the angle of the preopercular ridge. EURYSTOLE seems to be at least remotely related to THYRINA, which it resembles in the trenchant edge of the short belly, the anterior origin of the long anal fin, and in the slender rami of the lower jaw.

98. **Eurystole eriarcha** (Jordan and Gilbert), 1881.$^{St.}$

(Plate V, Fig. 19)

ATHERINELLA ERIARCHA Jordan and Gilbert, *Proc. U. S. Nat. Mus.*, **4**, 348, 1881.

EURYSTOLE ERIARCHA Jordan, *Proc. Cal. Acad. Sci.* (2), **5**, 418, pl. 32, 1895; Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **47**, pt. 1, 803, 1896; **4**, pl. 125, fig. 339, 1900; Osborn and Nichols, *Bull. Amer. Mus. Nat. Hist.*, **35**, 156, 1916.

Type-locality.—Mazatlan, Mexico, in a tide pool.

Range.—Gulf of California and adjacent regions.

There are about 52 scales in the median longitudinal series in the type specimen of E. ERIARCHA.

XXVIII. **PSEUDOTHYRINA** Ribeiro, 1915.

PSEUDOTHYRINA Ribeiro, *Arch. Mus. Nac. Rio de Janeiro*, **17**, *Trematolepides*, 11, 1915.

Haplotype.—PSEUDOTHYRINA JHERINGI Ribeiro.

Range.—Southeastern Brazil.

99. **Pseudothyrina jheringi** Ribeiro, 1915.

PSEUDOTHYRINA JHERINGI Ribeiro, *Arch. Mus. Nac. Rio de Janeiro*, **17**, *Trematolepides*, 11, 1915; Ribeiro, *Rev. Mus. Pal.*, **10**, 763, 1918.

Type-locality.—Rio Grande do Sul.

Range.—Rio Grande do Sul, Brazil.

This is one of the large atherines characteristic of temperate South America. It is described as similar in form of body to THYRINA, but it differs from that genus in the less backward insertion of the first dorsal, the smaller size of the scales, etc.

XXIX. **KRONIA** Ribeiro, 1915.

KRONIA Ribeiro, *Arch. Mus. Nac. Rio de Janeiro*, **17**, *Trematolepides*, 9, 1915.

Haplotype.—KRONIA IGUAPENSIS Ribeiro.

Range.—Southeastern Brazil.

100. **Kronia iguapensis** Ribeiro, 1915.

KRONIA IGUAPENSIS Ribeiro, *Arch. Mus. Nac. Rio de Janeiro*, **17**, *Trematolepides*, 19, 1915.

Type-locality.—Iguape, S. Paulo, Brazil.

Range.—Southeastern Brazil (known only from the type locality).

This large South American atherine differs little from ODONTESTHES, insofar as the descriptions indicate. The scale margins are described as "sub-laciniadas" in KRONIA, as entire in ODONTESTHES; the teeth in bands in KRONIA, in two series in ODONTESTHES. It is not clear from the diagnosis of KRONIA whether that genus has the peculiar pike-like head and elongate abdominal region of ODONTESTHES.

XXX. ODONTESTHES Evermann and Kendall, 1906.

ODONTESTHES Evermann and Kendall, *Proc. U. S. Nat. Mus.*, **31**, 94, 1906; Hubbs, *Proc. Acad. Nat. Sci. Phila.*, **69**, 308, 1918.

Orthotype.—ODONTESTHES PERUGIÆ Evermann and Kendall.

Range.—Argentina and Uruguay.

101. Odontesthes perugiæ Evermann and Kendall, 1906.

(Plate III, Fig. 11)

? ATHERINICHTHYS VOMERINA Perugia, *Ann. Mus. Genova*, **30**, 621, 1891; Berg, *An. Mus. Nac. Buenos Aires*, **4**, 26, 1895 (not ATHERINA VOMERINA Cuvier and Valenciennes).

ODONTESTHES PERUGIÆ Evermann and Kendall, *Proc. U. S. Nat. Mus.*, **31**, 94, fig. 3, 1906.

Type-locality.—Argentina ("locality label lost; probably from fresh water").

Range.—Argentina; not definitely known.

102. Odontesthes platensis (Berg), 1895.

ATHERINICHTHYS PLATENSIS Berg, *An. Mus. Nac. Buenos Aires*, **4**, 27, 1895.

ODONTESTHES PLATENSIS Evermann and Kendall, *Proc. U. S. Nat. Mus.*, **31**, 95, 1906.

Type-locality.—Mar del Plata.

Range.—Argentina.

As Evermann and Kendall note, this species is probably congeneric with O. PERUGIÆ. The elongation of the jaws, and of the abdominal region of the body is, however, not described.

103. Odontesthes argentinensis (Cuvier and Valenciennes), 1835.

ATHERINA ARGENTINENSIS Cuvier and Valenciennes, *Hist. Nat. Poiss.*, **10**, 472, 1835; Jenyns, *Zool. Beagle*, **4**, (*Fishes*), 77, 1842.

[BASILICHTHYS] ARGENTINENSIS Girard, *U. S. Nav. Astron. Exp.* **2**, 237, 1860.

ATHERINICHTHYS ARGENTINENSIS Günther, *Catalogue Fishes Brit. Mus.*, **3**, 405, 1861 (and of most later authors).

CHIROSTOMA ARGENTINENSIS Eigenmann and Eigenmann, *Proc. U. S. Nat. Mus.*, **14**, 66, 1891.

[ODONTESTHES] ARGENTINENSIS Hubbs, *Proc. Acad. Nat. Sci. Phila.*, **69**, 308, 1918.

Type-locality.—Montevideo.

Range.—Uruguay and Argentina.

The posterior position of the spinous dorsal and the rather large scales (compared with other species of temperate South America) would seem to indicate close relationship with ODONTESTHES PERUGIÆ. The species is not described as having vomerine teeth, however.

XXXI. AUSTROMENIDIA Hubbs, 1918.

ATHERINICHTHYS Günther, *Catalogue Fishes Brit. Mus.*, **3**, 402, 1861 (in part; not ATHERINICHTHYS Bleeker = CHIROSTOMA Swainson).

BASILICHTHYS of authors (not of Girard, *Proc. Acad. Nat. Sci. Phila.*, 198, 1854. Orthotype, ATHERINA MICROLEPIDOTA Jenyns. BASILICHTHYS Girard = GASTROPTERUS Cope = PISCIREGIA Abbott).

AUSTROMENIDIA Hubbs, *Proc. Acad. Nat. Sci. Phila.*, **69**, 307, 1918.

Orthotype.—BASILICHTHYS REGILLUS Abbott.

Range.—Temperate portion of South America, along the coast and in lakes and streams from Uruguay and Peru south to the Straits of Magellan; also about the Falkland and Juan Fernandez Islands

We refer to AUSTROMENIDIA most of the large fine-scaled atherines of temperate South America. The typical species are unlike those of other genera, but some of the species approach ODONTESTHES, KRONIA, and MENIDIA. The species are mostly poorly known, and have been greatly confused by ichthyologists. Several of the west coast species have been recorded on an obviously unsatisfactory basis from Argentina. We have made an effort to determine the proper synonymy, status and distribution of each form, as far as the facts are known.

104. Austromenidia bonariensis (Cuvier and Valenciennes), 1835.$^{St.}$

ATHERINA BONARIENSIS Cuvier and Valenciennes, *Hist. Nat. Poiss.*, **10**, 469, 1835.

[BASILICHTHYS] BONARIENSIS Girard, *U. S. Nav. Astron. Exp.*, 238, 1860.

ATHERINICHTHYS BONARIENSIS Günther, *Catalogue Fishes Brit. Mus.*, **3**, 404, 1861 (and of authors in general).

CHIROSTOMA BONARIENSIS Eigenmann and Eigenmann, *Proc. U. S. Nat. Mus.*, **14**, 66, 1891.

BASILICHTHYS BONARIENSIS Evermann and Kendall, *Proc. U. S. Nat. Mus.*, **30**, 95, 1906.

MENIDIA BONARIENSIS Thompson, *Proc. U. S. Nat. Mus.*, **50**, 406, 1915.

ATHERINA BONASICOSI Bleeker, *Nalezingen op de Ichthyologie van Japan*, **41**, 1853 (apparently a slip in chirography for BONARIENSIS).

Type-locality.—Buenos Aires, Argentina.

? ATHERINA LESSONI Cuvier and Valenciennes, *Hist. Nat. Poiss.*, 10, 471, 1835 (based on an inadequate drawing).

Type-locality.—Santa Caterina, Brazil.

ATHERINA LICHTENSTEINII Cuvier and Valenciennes, *Hist. Nat. Poiss.*, **10**, 476, 1835; Günther, *Catalogue Fishes Brit. Mus.*, **3**, 404, 1861.

Type-locality.—Montevideo, Uruguay.

Range.—Argentina, Uruguay, and possibly southeastern Brazil; chiefly in fresh water.

105. Austromenidia hatcheri (Eigenmann), 1909.$^{St.}$

ATHERINICHTHYS MICROLEPIDOTUS Perugia, *Ann. Mus. Genova*, **30**, 32, 1891; Berg, *An. Mus. Nac. Buenos Aires*, **4**, 66, 1895.

BASILICHTHYS MICROLEPIDOTUS Evermann and Kendall, *Proc. U. S. Nat. Mus.*, **31**, 97, 1906; Thompson, *ibid.*, **50**, 464, 1916 (not ATHERINA MICROLEPIDOTA Jenyns).

MENIDIA HATCHERI Eigenmann, *Repts. Princeton Univ. Exp. Patagonia*, **3**, 281, pl. 37, fig. 4, 1909.

Type-locality.—Lake Pueyrredon, Patagonia.

Range.—Fresh waters of Argentina.

106. Austromenidia regia (Humboldt), 1835.St.

ATHERINA REGIA Humboldt, *Rec. Obs. Zool. Anat. Comp.*, **2**, 187, 1835; Cuvier and Valenciennes, *Hist. Nat. Poiss.*, **10**, 474, 1835.
  BASILICHTHYS REGIA Fowler, *Proc. Acad. Nat. Sci. Phila.*, **40**, 734, 1904.
  MENIDIA REGIA Thompson, *Proc. U. S. Nat. Mus.*, **50**, 465, 1916.
  Type-locality.—Callao, Peru.
ATHERINICHTHYS LATICLAVIA Günther, *Catalogue Fishes Brit. Mus.*, **3**, 402, 1861 (reference only).
  ATHERINA LATICLAVIA Cope, *Proc. Amer. Phil. Soc.*, **17**, 44, 1878 (not ATHERINA LATICLAVIA Cuvier and Valenciennes).
BASILICHTHYS REGILLUS Abbott, *Proc. Acad. Nat. Sci. Phila.*, 339, 1899; Starks, *Proc. U. S. Nat. Mus.*, **30**, 783, 1906.
  MENIDIA REGILLUS Thompson, *Proc. U. S. Nat. Mus.*, **50**, 466, 1916.
  Type-locality.—Callao, Peru.
BASILICHTHYS OCTAVIUS Abbott, *Proc. Acad. Nat. Sci. Phila.*, 340, 1899; Evermann and Radcliffe, *Bull. U. S. Nat. Mus.*, **95**, 47-49, 1917.
  Type-locality.—Callao, Peru.
BASILICHTHYS JORDANI Abbott, *Proc. Acad. Nat. Sci. Phila.*, 341, 1899.
  Type-locality.—Callao, Peru.
CHIROSTOMA AFFINE Steindachner, *Denk. Akad. Wiss. Wien*, **72**, 40, 1902 (specimens from Callao, Peru, only; not of 1898).
  BASILICHTHYS AFFINIS Evermann and Radcliffe, *Bull. U. S. Nat. Mus.*, **95**, 47, 1917 (specimens from Callao, Paracas Bay, and Ancon, Peru).
Range.—Coast of Peru.

107. Austromenidia laticlavia Cuvier and Valenciennes, 1835.St.

ATHERINA LATICLAVIA Cuvier and Valenciennes, *Hist. Nat. Poiss.*, **10**, 473, 1835.
  ATHERINICHTHYS LATICLAVIA Günther, *Catalogue Fishes Brit. Mus.*, **3**, 402, 1861 (in part?); Quijada, *Bol. Mus. Nac. Chile*, **5**, 56, pl. 9, 1913 (and of other authors).
  CHIROSTOMA LATICLAVIA Steindachner, *Zool. Jahrb.*, Suppl. 4, 313, 1899.
  MENIDIA LATICLAVIA Eigenmann, *Repts. Princeton Univ. Exp. Patagonia*, **3**, 281, 1903 (references in part).
  Type-locality.—Valparaiso, Chile.
CHIROSTOMA AFFINE Steindachner, *Zool. Jahrb.*, Suppl. 4, 313, 1898; *Bol. Mus. Nac. Chile*, **5**, 184, 1913.
  BASILICHTHYS AFFINIS Abbott, *Proc. Acad. Nat. Sci. Phila.*, 342, 1899.
  Type-locality.—Iquique, Chile.
Range.—Coast of Chile, between 20° and 38° S. latitude.

We retain A. LATICLAVIA as a species distinct from A. REGIA, because the specimens at hand and the various published descriptions of the two forms indicate that the Peje-rei of Chile has the head proportionately smaller than the very similar fish from Peru (A. REGIA). It is not improbable that the two will be found to intergrade.

The records of LATICLAVIA from southern Chile (Smitt), Falkland Islands (Günther), and Argentina (Berg, etc.) probably all refer to other species of the genus.

108. **Austromenidia gracilis** (Steindachner), 1898.

CHIROSTOMA GRACILE Steindachner, *Zool. Jahrb.*, Suppl. 4, 314, 1898; *Bol. Mus. Nac. Chile*, 5, 186, 1913 (not ATHERINICHTHYS GRACILIS Günther).

Type-locality.—Cumberland Bay, Island of Juan Fernandez.

Range.—Juan Fernandez Island, off Chile.

This species seems to be an insular representative of A. LATICLAVIA. The name GRACILIS may not be eligible, as CHIROSTOMA is the same as ATHERINICHTHYS.

109. **Austromenidia brevianalis** (Günther), 1880.

? ATHERINICHTHYS INCISA Kner, *Reise Novara, Fische*, 223, pl. 9, fig. 1, 1865 (not ATHERINA INCISA Jenyns).

ATHERINICHTHYS BREVIANALIS Günther, *Rept. Voy. Challenger*, 1, pt. 6 *(Shore Fishes)*, 25, 1880.

Type-locality.—Valparaiso, Chile.

Range.—Coast of Chile.

A. BREVIANALIS has larger scales than any other Pacific species of the genus. It has the anal rays rather few in number, as in MAULEANA and ITATANA. A. INCISA of Kner (not Jenyns) is probably based on the same species, also having the scales comparatively large and the anal rays few.

110. **Austromenidia mauleana** (Steindachner), 1869.$^{St.}$

CHIROSTOMA MAULEANUM Steindachner, *Ann. Naturhist. Hofmus. Wien*, 11, 231, 1896; *Zool. Jahrb.*, Suppl. 4, 313, 1898.

MENIDIA MAULIANA Thompson, *Proc. U. S. Nat. Mus.*, 50, 465, 1916.

Type-locality.—River Maule, Chile.

Range.—Rivers and possibly coast of Chile.

A. MAULEANA has the gill-rakers much fewer in number than in typical species of AUSTROMENIDIA.

111. **Austromenidia itatana** (Steindachner), 1896.

CHIROSTOMA ITATANUM Steindachner, *Ann. Naturhist. Hofmus. Wien*, 11, 232, 1896.

Type-locality.—Itata River, Chile.

Range.—Chile, known only from the type-locality.

Judging from Steindachner's description, A. ITATANA is closely related to A. MAULEANA.

112. **Austromenidia nigricans** (Richardson) 1844.$^{St.}$

ATHERINA NIGRICANS Richardson, *Voy. Erebus and Terror, Fishes*, 77, pl. 42, figs. 13-18.

ATHERINICHTHYS NIGRICANS Günther, *Catalogue Fishes Brit. Mus.*, 3, 403, 1861; Smitt, *Bih. Sven. Vet.-Akad.*, 24, pt. 4, No. 5, 29, pl. 4, fig. 29, 1898.

Type-locality.—Falkland Islands.

? ATHERINICHTHYS LATICLAVIA Günther, *Catalogue Fishes Brit. Mus.*, 3, 403, 1861 (specimen from Falkland Island only).

ATHERINICHTHYS ALBURNUS Günther, *Catalogue Fishes Brit. Mus.*, 3, 403, 1861; Cunningham, *Trans. Linn. Soc. London*, 27, 471, 1871.

MENIDIA ALBURNUS Thompson, *Proc. U. S. Nat. Mus.*, 50, 423, 1916.

? ATHERINICHTHYS REGIA LATICLAVIA Smitt, *Bih. Sven. Vet.-Akad.*, **24**, pt. 4, No. 5, 32, pl. 4, fig. 30, 1898 (not ATHERINA LATICLAVIA Cuvier and Valenciennes).

? ATHERINICHTHYS REGIA MICROLEPIDOTA Smitt, *l. c.*, 32, pl. 4, fig. 31, 1898 (not ATHERINA MICROLEPIDOTA Jenyns).

MENIDIA PATAGONIENSIS Eigenmann, *Repts. Princeton Univ. Exp. Patagonia*, **3**, 280, 1909 (the footnote refers to this species, not to HATCHERI).

Type-locality.—"Probably at Sandy Point (Punta Arenas), Straits of Magellan."
Range.—Falkland Islands; Straits of Magellan, southern Chile.

This species has finer scales than any other of the genus. Its range is the most southern of any American atherine.

The two forms described by Smitt under the unavailable names LATICLAVIA and MICROLEPIDOTA may prove worthy of subspecific or even specific separation, in which case they will receive new names. These forms may have been based on intergrades between NIGRICANS and LATICLAVIA.

XXXII. CHIROSTOMA Swainson, 1839.

CHIROSTOMA Swainson, *Nat. Hist. Class. Anim.*, **2**, 243, 1839; Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **47**, pt. 1, 792, 1896; Jordan and Snyder, *Bull. U. S. Fish Comm.*, **19**, 133, 1899 (1900); Meek, *Publ. Field Mus.* (*Zool.*), **3**, 108. 1902; **5**, 166, 1904; Regan, *Biol. Centr.-Amer., Pisces*, 57, 1907 (in part); Eigenmann, *Repts. Princeton Univ. Exp. Patagonia*, **3**, 280, 1909.

Haplotype.—ATHERINA HUMBOLDTIANA Cuvier and Valenciennes.

ATHERINOIDES Bleeker, *Verh. Batav. Gen. Japan*, **25**, 40, 1853.

Orthotype.—ATHERINA VOMERINA Cuvier and Valenciennes (= HUMBOLDTIANA).

ATHERINICHTHYS Bleeker, *l. c.*, 40 (not ATHERINICHTHYS of most subsequent authors).

Orthotype.—ATHERINA HUMBOLDTIANA Cuvier and Valenciennes.

HETEROGNATHUS Girard, *Proc. Acad. Nat. Sci. Phila.*, 198, 1854.

Logotype.—ATHERINA HUMBOLDTIANA Cuvier and Valenciennes.

LETHOSTOLE Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **47**, pt. 1, 792, 1896; pt. 3, 2839, 1898; Jordan and Snyder, *Bull. U. S. Fish Comm.*, **19**, 133, 1899 (1900); Meek, *Publ. Field Mus.* (*Zool.*), **3**, 108, 1902.

Orthotype.—CHIROSTOMA ESTOR Jordan.

ESLOPSARUM Jordan and Evermann, *Rept. U. S. Fish Comm.*, 330, 1895 (1896); Jordan and Snyder, *Bull. U. S. Fish Comm.*, **19**, 133, 1899 (1900); Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **47**, pt. 3, 2840, 1898; Meek, *Publ. Field Mus. (Zool.)*, **3**, 108, 1902.

Orthotype.—CHIROSTOMA JORDANI Woolman.

Range.—Lerma River stream system of central Mexico, including the lakes and streams of the Rio Grande de Santiago, Rio Lerma Basin, the lakes and canals of the Valley of Mexico, and the Rio Mezquital Basin.

This genus is confined to the lakes and streams of the Lerma River system of Mexico, and of the valley of the City of Mexico. It includes all of the atherine fishes known from that district. Each one of the species described from variously remote localities under the name of

CHIROSTOMA or its synonym, ATHERINICHTHYS, proves on more critical examination to belong to some other genus of the family.

Even as thus restricted, CHIROSTOMA comprises a diverse, and at first consideration apparently unnatural, assemblage of species. We regard them all as congeneric only because of the existence of several species intermediate between each of the contrasting groups of species which has been distinguished. A graded series of species may be arranged in reference to each of the widely varying characters. The size varies from small to large; the vertebræ from 37 to 45 in number; the scales from 36 to 75 transverse series; the scale borders from strictly smooth to sharply crenate; the origin of the first dorsal from a position over that of the anal to a point as near the insertion of the ventral fin; the proportionate size of head, snout, and eye, from small to large; the elevation of the mandibular rami from slight to great; the projection of the mandible beyond the tip of the premaxillaries from little to much; the teeth from small to canine-like in size, and from a biserial to a band arrangement. The sequence of species in these several series, however, is not the same. Having determined these facts by an examination of all the known species of the genus, we are unable to make a satisfactory division of the group, diverse as it is.

CHIROSTOMA is very closely related to MENIDIA, from which it differs constantly in the projection of the lower jaw at its symphysis beyond the upper,[24] and the extension of the air bladder into the tail over about one-third to two-thirds of the anal base. Other distinctive features of CHIROSTOMA, as compared with MENIDIA, are usually but not always evident. These include the larger size; the development of vomerine teeth; the longer, more pointed pectoral fin; the small size of scales, their crenate margins, and the lack of circuli on their exposed fields. From THYRINA, equally near, CHIROSTOMA differs constantly in the more anterior position of the first dorsal fin, and the projection of the lower jaw; usually in the smaller size of the scales, etc. Some species of AUSTROMENIDIA resemble the finer-scaled species of CHIROSTOMA closely, even having the lower jaw as an individual variation slightly produced beyond the upper. This condition in AUSTROMENIDIA, as Abbott pointed out, is due rather to the weakness of the upper jaw, than to the increased strength of the lower jaw characteristic of CHIROSTOMA. The resemblance seems not due to close relationship.

We distinguish 18 species of CHIROSTOMA, two being named now for the first time. We find no evidence that the species are not well fixed, as intimated by Dr. Meek, and find but one instance of apparent hybridization. Their distribution is peculiar, several closely related species living together in the same lake. This rather anomalous condition is perhaps to be explained by the redistribution of the fish faunas of the various lakes by volcanic disturbances.

---

[24] Dr. Meek's figures of his species of CHIROSTOMA show the lower jaw decidedly too short, a fact which perhaps led Eigenmann to refer some of the species to MENIDIA, and to doubt the generic distinctiveness of the two groups.

113. **Chirostoma jordani** Woolman, 1894.$^{St.}$

(Plate VI, Fig. 21.)

CHIROSTOMA BRASILIENSIS Jordan, *Proc. U. S. Nat. Mus.*, **2**, 299, 1879 (not ATHERINA BRASILIENSIS Quoy and Gaimard).

CHIROSTOMA JORDANI Woolman, *Bull. U. S. Fish Comm.*, **14**, 62, pl. 2, 1894; Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **21**, 540, 1898; Meek, *Publ. Field Mus.* (*Zool.*), **3**, 112, 1902; **5**, 169, fig. 52, 1904; Regan, *Biol. Centr.-Amer., Pisces*, 59, 1909 (in part).

ESLOPSARUM JORDANI Jordan and Evermann, *Rept. U. S. Fish Comm.*, 330, 1895 (1896); *Bull. U. S. Nat. Mus.*, **47**, pt. 3, 2840, 1898; **4**, 3157, pl. 123, fig. 335, 1900; Jordan and Snyder, *Bull. U. S. Fish Comm.*, **19**, 133, 1899 (1900); Evermann and Goldsborough, *ibid.*, **21**, 152, 1901 (1902).

Type-locality.—Mexico City (now definitely restricted).

ATHERINICHTHYS BREVIS Steindachner, *Anz. Akad. Wiss. Wien*, **31**, 149, 1894.

CHIROSTOMA BREVE Steindachner, *Denk. Akad. Wiss. Wien*, **62**, 526, pl. 2, fig. 2, 1895.

Type-locality.—Lake Cuitzeo, Mexico.

Range.—Valley of Mexico, and the Lerma Basin; in streams, canals, and lakes.

CHIRSOTOMA BREVE (Steindachner) resembles C. JORDANI in the extreme obliquity of the gape. Contrary to Regan's view, we regard the two names as based on the same species.

A large series of JORDANI, including a specimen from Pátzcuaro, has been examined. The form of the body varies widely, in places resembling C. ARGE. The anal rays are occasionally as numerous as I, 20. The teeth are finer than in most species; those of the upper jaw appear to be arranged in a narrow band; none are especially enlarged.

114. **Chirostoma mezquital** Meek, 1904.$^{St.}$

(Plate V, Fig. 20)

CHIROSTOMA MEZQUITAL Meek, *Publ. Field Mus.* (*Zool.*), **5**, 170, fig. 53, 1904.

Type-locality.—Rio Mezquital, near Durango, Mexico.

CHIROSTOMA JORDANI Regan, *Biol. Centr.-Amer., Pisces*, 59, 1907 (in part).

Range.—Basin of the Rio Mezquital, Mexico.

Mr. Regan's reference of this species to C. JORDANI is erroneous, the differences indicated by Meek in his description and figure of MEZQUITAL being constant. In the nine type specimens of MEZQUITAL, the mouth is decidedly less oblique than in JORDANI; the body is less compressed; the head is less angular in either anterior or superior aspect; the origin of the spinous dorsal is farther forward (midway between base of caudal and a point forward of the tip of snout, a distance varying from a little less than half eye, to more than length of eye). In a large series of JORDANI from the Valley of Mexico and the Lerma Basin, the origin of the first dorsal is midway between the base of the caudal and a point varying from more than the length of the eye behind the snout, to a little more than half length of eye before snout. C. MEZQUITAL is perhaps quite as closely related to C. ARGE, but is likewise distinct from it.

In C. MEZQUITAL the teeth are disposed rather definitely in two series in the jaws, those of the outer mandibular and inner premaxillary series slightly enlarged. The teeth erroneously said to be uniserial in the type description.

115. **Chirostoma labarcæ** Meek, 1902.$^{St.}$

(Plate VI, Fig. 22)

CHIROSTOMA LABARGÆ Meek, *Publ. Field Mus.* (*Zool.*), **3**, 113, pl. 27, 1902; **5**, 173, 1904.

Type-locality.—Rio Lerma at La Barca, Jalisco, Mexico.

CHIROSTOMA BREVE Regan, *Biol. Centr.-Amer., Pisces,* 59, 1907 (in part; not of Steindachner).

Range.—Vicinity of Lake Chapala, Mexico (known only from La Barca and La Palma).

This very distinct species is identical neither with BREVE (= JORDANI), as Mr. Regan suggested, nor with the species (REGANI) which he described under the name BREVE. It is perhaps most closely related to C. JORDANI, which is the only other species in which the first dorsal fin begins over the origin of the anal. It differs from JORDANI, as well as from all other large-scaled species of the genus, in the long and acutely pointed snout.

The dentition of this species has not been accurately described. The teeth are in two irregular series in both jaws; those of the outer series in the mandible are enlarged; those of the inner premaxillary series become canine-like toward the front of the jaws.

116. **Chirostoma arge** (Jordan and Snyder), 1900.$^{St.}$

(Plate VI, Fig. 23)

ESLOPSARUM ARGE Jordan and Snyder, *Bull. U. S. Fish Comm.*, **19**, 133, fig. 12, 1899 (1900); Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **47**, pt. 4, 3158, 1900.

CHIROSTOMA ARGE Meek, *Publ. Field Mus. (Zool.)*, **3**, 112, 1902; **5**, 171, fig. 54, 1904; **7**, 156, 1907; Regan, *Biol.-Centr.-Amer., Pisces,* 59, 1907.

Type-locality.—Rio Verde, near Aguas Calientes, Mexico.

Range.—Rio Verde and Rio Lerma, and their tributaries, Mexico (not known from the lakes).

Topotypes of C. ARGE from Aguas Calientes and Lagos (also in the Rio Verde Basin) are more slender than the holotype. Others from San Miguel de Allende, taken in a tributary to the Rio Lerma, are more robust in form; in these specimens the pectoral fins are usually but not always longer, and all of the fins much more deeply pigment, than in the topotypes. Five young specimens from Salamanca, included in the type lot of C. JORDANI Woolman, have a still longer pectoral, this fin being about two-fifths, instead of one-third, as long as the interspace between occiput and spinous dorsal; the eye is larger and the head broader than in young of similar size in the other series mentioned above (the diameter of the eye and the width of the interorbital are each longer than the snout). Possibly more than one species is included in these several series.

The dentition of C. ARGE differs from that of JORDANI, MEZQUITAL, or LABARCÆ. The premaxillary teeth are in two series laterally, and about three series anteriorly, where those of the outer series, slightly enlarged throughout, are somewhat longer than those of the inner series.

117. **Chirostoma bartoni** Jordan and Evermann, 1896.St.

(Plate VI, Fig. 24)

CHIROSTOMA HUMBOLDTIANUM Jordan, *Proc. U. S. Nat. Mus.*, **2**, 299, 1879 (not ATHERINA HUMBOLDTIANA Cuvier and Valenciennes).

CHIROSTOMA BARTONI Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **47**, pt. 1, 793, 1896; Evermann and Goldsborough, *Bull. U. S. Fish Comm.*, **21**, 152, 1901 (1902); Meek, *Publ. Field Mus. (Zool.)*, **3**, 112, 1902; **5**, 172, 1904; Regan, *Biol. Centr.-Amer. Pisces*, 58, 1907 (in part).

ESLOPSARUM BARTONI Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **47**, pt. 3, 2840, 1898.

Type-locality.—A tributary of the Rio Lerma, near Guanajuato, Mexico.

CHIROSTOMA ATTENUATUM Meek, *Publ. Field Mus.* (*Zool.*) **3**, 112, pl. 27, 1902; **5**, 172, fig. 55, 1904.

Type-locality.—Lago de Pátzcuaro, Michoacan, Mexico.

Range.—Tributaries of the Lerma River, Lake Lerma, and Pátzcuaro, Mexico.

Mr. Regan was certainly in error in referring the more finely scaled C. ZIRAHUEN to this species. He seems to have been correct, however, in assigning ATTENUATUM to BARTONI, as a reëxamination of Dr. Meek's material indicates. The specimens of BARTONI from Lake Lerma and the Lerma fish-hatchery have the spinous dorsal in the same position as in the types of ATTENUATUM from Lake Pátzcuaro; in both series the soft anal rays vary from 13 to 15.

The fine teeth of BARTONI are biserially arranged in the jaws. The teeth of the outer mandibular series are curved and slightly enlarged; those of the two premaxillary series are of subequal size, slightly enlarged in the inner series near front of jaws.

118. **Chirostoma zirahuen** Meek, 1902.St.

(Plate VII, Fig. 25)

CHIROSTOMA ZIRAHUEN Meek, *Publ. Field Mus.* (*Zool.*), **3**, 114, pl. 28, 1902; **5**, 174, fig. 57, 1904.

Type-locality.—Lago de Zirahuen, Zirahuen, Michoacan, Mexico.

CHIROSTOMA BARTONI Regan, *Biol. Centr.-Amer., Pisces*, 58, pl. 10, fig. 2, 1907 (in part) (not of Jordan and Evermann).

Range.—Lake Zirahuen, Mexico.

The scales of this form, as indicated by Dr. Meek's description and figure, are finer than in C. BARTONI (= ATTENUATUM), to which species Mr. Regan wrongly referred ZIRAHUEN.

In C. ZIRAHUEN the teeth are biserial or nearly so. Those of the outer series of the mandible are enlarged, but still small. A similar relation holds true for the upper jaw laterally, but anteriorly the teeth of both premaxillary series are about as large as those of the outer mandibular row.

119. **Chirostoma patzcuaro** Meek, 1902.St.

(Plate VII, Fig. 26)

CHIROSTOMA PATZCUARO Meek, *Publ. Field Mus., Zool.,* 3, 113, pl. 27, 1902; 5, 174, fig. 56, 1904; Regan, *Biol. Centr.-Amer., Pisces,* 58, pl. 10, fig. 1, 1907.

Type-locality.—Lago de Pátzcuaro, Mexico.

Range.—Lake Pátzcuaro, Pátzcuaro, Mexico.

The type figure of this species, and that of C. ZIRAHUEN, are poorly drawn, showing the eye too large and the lower jaw too short.

The teeth of C. PATZCUARO are arranged in narrow bands. The outermost teeth of the lower jaw, and the innermost of the anterior teeth in the upper jaw, are enlarged, but not canine-like.

CHIROSTOMA PATZCUARO differs from C. ZIRAHUEN in the more compressed form, more numerous anal rays, the crenate scales, etc. From C. HUMBOLDTIANUM, with which it was taken in Lake Pátzcuaro, it differs in the smaller size attained, in the higher and more anteriorly inserted first dorsal, and in dentition. It resembles HUMBOLDTIANUM quite closely, however, like that species having the scale margins weakly crenate. Dr. Meek in 1902 placed the two species in different subgenera, and having overlooked their crenate scale margins, excluded both from the subgenus LETHOSTOLE.

120. **Chirostoma humboldtianum** (Cuvier and Valenciennes), 1835.St.

(Plate VIII, Fig. 27)

ATHERINA HUMBOLDTIANA Cuvier and Valenciennes, *Hist. Nat. Poiss.,* 10, 479, pl. 306, 1835.

ATHERINICHTHYS HUMBOLDTI Günther, *Catalogue Fishes Brit. Mus.,* 3, 404, 1861 (altered spelling).

CHIROSTOMA HUMBOLDTIANUM Jordan and Evermann, *Bull. U. S. Nat. Mus.,* 47, pt. 1, 793, 1896; pt. 3, 2839, 1898; pt. 4, 123, fig. 334, 1900; Evermann, *Proc. Biol. Soc. Wash.,* 12, 2, 1898; Jordan and Snyder, *Bull. U. S. Fish Comm.,* 19, 134, 1899 (1900); Evermann and Goldsborough, *ibid.,* 21, 152, 1901 (1902); Meek, *Publ. Field Mus. (Zool.),* 3, 114, 1902; 5, 175, 1904; Regan, *Biol. Centr.-Amer., Pisces,* 60, 1908.

Type-locality.—Lake near City of Mexico.

ATHERINA VOMERINA Cuvier and Valenciennes, *Hist. Nat. Poiss.,* 10, 481, 1835.

Type-locality.—Lake near City of Mexico.

Range.—Lakes in the Valley of Mexico and the Lerma Basin, Mexico.

As Jordan and Evermann noted in 1898, the scale margins in this species become laciniate with age, a character supposed to distinguish the group LETHOSTOLE. The differences between HUMBOLDTIANUM, type of CHIROSTOMA, and ESTOR, the type of LETHOSTOLE, are not wide, consisting of the size of the scales, the amount of projection of the mandible, and other details. We do not regard the two groups as subgenerically separable.

The teeth in C. HUMBOLDTIANUM are small and form a narrow band posteriorly in each jaw, but anteriorly are less reduced in size, and tend to assume a biserial arrangement. In one specimen at hand the anterior premaxillary teeth are arranged biserially on one side, triserially on the other. The teeth of the inner series are a little larger than those of the outer series in the lower jaw, but not notably larger in the upper jaw.

121. **Chirostoma regani** Jordan and Hubbs, new species, 1919.St.

CHIROSTOMA BREVE Regan, *Biol. Centr.-Amer., Pisces*, 59, pl. 10, fig. 3, 1907 (description and figure based upon specimens originally included in the same lot as that now comprising the types of C. REGANI; not ATHERINICHTHYS BREVIS Steindachner).

CHIROSTOMA REGANI Jordan and Hubbs, new species.

Type-locality.—Xochimilco, in the Valley of Mexico.

Range.—Lakes Xochimilco and Pátzcuaro, Mexico.

Holotype.—A mature female 94 mm. long to caudal base, collected in 1901 by Dr. S. E. Meek, at Xochimilco, in the Valley of Mexico; Cat. No. 3687, Field Museum of Natural History. Paratypes from the same locality, some obtained in 1901, others in 1903, the longest just as large as the type, are deposited in the fish collections of the Field Museum and Stanford University. Other specimens from Lake Pátzcuaro are at hand, showing the same variations as those exhibited by the type series.

CHIROSTOMA REGANI has been described and figured by Regan under the name of BREVE, which is really a synonym of JORDANI. He also referred the very different LABARCÆ to BREVE. C. REGANI is perhaps most closely related to HUMBOLDTIANUM, but differs from that species in its smaller size, larger and more completely crenate scales, shorter and blunter snout, smaller eye, etc. From PATZCUARO, a species of similar size, it is distinguished by the same proportional differences, and by the more posteriorly inserted first dorsal. It has finer scales, a smaller eye, etc., than GRANDOCULE. It differs from CHAPALÆ, to which it is also closely related, in the firmer flesh, less compressed body, convex lower margin of mandible, less oblique maxillary, fewer gill-rakers, and fewer anal rays.

Body gracefully slender, the contours gradually converging backward and forward from the middle and deepest point of the fish's length; greatest depth, 5.2 (4.7 to 5.4)[25] in length without caudal; depth of caudal peduncle, 2.6 (2.2 to 2.6) in its length behind end of anal base, 2.6 (2.5 to 2.8) in length of head to opercular margin (excluding membrane). Head, 4.2 (4.0 to 4.35). Orbit placed anteriorly, its hinder margin being equidistant from tip of snout and from margin of branchiostegal membrane; length of orbit, 4.2 (4.0 to 4.4) in head; length of moderately blunt snout, 3.4 (3.4 to 3.6); least interorbital width, 3.6 (3.4 to 3.8). Upper jaw strongly curved, but less oblique posteriorly than in CHAPALÆ or JORDANI; maxillary extending backward almost (or quite) to the vertical from the anterior margin of the orbit; length of upper jaw, 2.8 (2.6 to 3.0) in head; mandible strong, elevated within the mouth, its lower margin slightly convex to its blunt tip, which projects a little farther forward than the premaxillaries; lips rather thick posteriorly. Teeth fine, disposed in bands along jaws; teeth of outer mandibular series slightly enlarged; teeth a little enlarged in an inner and an outer series on the premaxillary, between which there is a band of fine teeth, narrowest anteriorly; outer premaxilliary teeth visible from above in some specimens; vomer with a few teeth (not evident in some specimens). Gill-rakers, 4 + 15 (in a paratype) as in HUMBOLDTIANUM, much fewer and stouter than in CHAPALÆ, the longest scarcely more than half as long as the orbit.

Air bladder extended backward nearly to above middle of anal base. Vertebræ 42 (in a paratype), fewer than in BARTONI. Now BARTONI, by reason of its large and entire marginal scales, has been placed in a subgenus or genus supposedly distinguished from CHIROSTOMA, to which REGANI is referable, by its *fewer* vertebræ. It is such facts as this that have led us to unite all of the CHIROSTOMA-like fishes into a single undivided group.

Scales moderate, reduced in size on the nape; in 45 (43 to 49) series from above branchial aperture to end of last vertebra; in 12 (11 to 14) series above anal origin; in 7 (6 to 8) series between origins of dorsals. Scale margins finely crenate.

Fin formula: dorsal, IV (or V)-I, 10 (9 to 11); anal, I, 18 (15 to 20); pectoral, 14 (12 to 14). First dorsal inserted a little before vertical from tips of ventrals (which do not quite reach to anus), equidistant from base of caudal and from middle of snout; first dorsal when depressed extending backward about three-fourths the distance from its origin to the second dorsal; its length thus measured contained 2.35

---

[25] Measurements in parentheses are those of ten paratypes from Xochimilco, 75 to 94 mm. long to caudal.

(2.2 to 2.5) times in head; second spine longest. Base of slightly falcate second dorsal shorter than its height, which is contained 1.5 (1.4 to 1.7) times in head. Anal fin somewhat falcate, a little higher than second dorsal; its base slightly shorter than (in paratypes as long as, or a little longer than) the head. Pectoral pointed, 1.3 (1.2 to 1.4) in head, overlying the anterior one-fourth (to two-fifths) of the length of the depressed ventral fin.

Some specimens, including the holotype, are very light in color, while others are deep brown; scales of the back in light specimens, and those of the sides also in dark ones, dark-margined. Lateral band distinct, about as wide as a scale on the tail. Snout and chin more or less deeply pigmented. Colors of the fins varying with that of the body. Peritoneum silvery, mottled with dusky and spotted with black, in light-colored individuals; uniform black in the darkest ones. (A similar wide range of coloration occurs in the series of HUMBOLDTIANUM from Xochimilco.)

122. **Chirostoma chapalæ** Jordan and Snyder, 1900.$^{St.}$

(Plate VIII, Fig. 28)

CHIROSTOMA CHAPALÆ Jordan and Snyder, *Bull. U. S. Fish Comm.*, **19**, 135, fig. 13, 1899 (1900); Jordan and Evermann, *Bull U. S. Nat. Mus.*, **47**, pt. 4, 3159, 1900; Pellegrin, *Bull. Mus. Hist. Nat. Paris*, **7**, 205, 1901; Meek, *Publ. Field Mus. (Zool.)*, **3**, 115, 1902; **5**, 176, fig. 58, 1904; Regan, *Biol. Centr.-Amer., Pisces*, 61, 1907.

Type-locality.—Laguna de Chapala, near Ocotlan, Mexico.

Range.—Lake Chapala, Mexico.

The following variations are exhibited by a series of twelve specimens of C. CHAPALÆ from La Palma. Depth of body, 5.2 to 6.2 in length to caudal (60 to 78 mm.); length of head (including opercular membrane), 4.0 to 4.4; length of snout, 3.4 to 3.8 in head; orbit, 3.3 to 3.6; mandible, 2.5 to 2.7; scales in 48 to 52 transverse series, in 13 or 14 longitudinal series above anal origin, in 7 to 9 series between origins of dorsals; fin rays; dorsal, IV or V-I, 10 to 12; anal, I, 19 to 22.

123. **Chirostoma consocium** Jordan and Hubbs, new species, 1919.$^{St.}$

CHIROSTOMA GRANDOCULE Meek, *Publ. Field Mus. (Zool.)*, **3**, 115, 1902 (in part); **5**, 176, 1904 (in part).

CHIROSTOMA GRANDOCULIS Regan, *Biol. Centr.-Amer., Pisces*, 61, 1907 (in part) (not ATHERINICHTHYS GRANDOCULIS Steindachner).

CHIROSTOMA CONSOCIUM Jordan and Hubbs, new species.

Type-locality.—Lake Chapala, at La Palma, Michoacan, Mexico.

Range.—Lake Chapala and its outlet, Rio Grande de Santiago.

Holotype.—A specimen 77 mm. long to caudal base, from Lake Chapala, at La Palma, Michoacan, Mexico; collected by Dr. S. E. Meek, May 30-31, 1901; Cat. No. 3672, Field Museum of Natural History; taken with numerous paratypes of smaller size. Other paratypes were secured by Dr. Meek at Ocotlan, Jalisco, Mexico, in the Rio Grande de Santiago, June 2 and 3, 1901.

This species most closely resembles C. GRANDOCULE of Lake Pátzcuaro, and C. CHAPALÆ of Lake Chapala. From GRANDOCULE (topotypes examined) it differs in the smaller size attained; in the deeper and more compressed body; more translucent flesh, particularly that of the head; in the longer head, larger eye and sharper snout, and in the larger size of the scales. The proportional differences, which, though evident, are not wide in the adults, are accentuated in the young. From specimens of C. CHAPALÆ, with which the numerous types were taken, CONSOCIUM differs constantly in the smaller size of the scales, the deeper body, larger head, more pointed snout, and the longer and much less oblique jaws.

Three specimens in the large series of the two species taken together at La Palma, while agreeing with CONSOCIUM in the fineness of their scales, have the smaller *more oblique* mouth of CHAPALÆ, and are definitely intermediate between the two forms in the length of the head and depth of the body. It seems certain that these specimens do not exhibit the extremes of the continuous variation of either species. We interpret them as possibly hybrids between CHAPALÆ and CONSOCIUM. The distinctive characters of the two species are contrasted with those of the supposed hybrids in the following table:

	C. CHAPALÆ	Hybrids?	C. CONSOCIUM
Depth of body	5.2 to 6.2	5.0 to 5.4	4.7 to 5.3
Length of head	4.0 to 4.4	3.7 to 3.85	3.2 to 3.6
Length of mandible	2.5 to 2.7	2.6 to 2.7	2.3 to 2.5
Transverse scale rows	44 to 52	57 to 61	53 to 63
Longitudinal scale rows	12 to 14	16 to 18	17 to 19
Scale rows between origins of dorsal fins	6 to 9	10 to 12	10 to 13

Body rather strongly compressed and moderately slender; the dorsal and ventral contours evenly converging, like the edges of a spear-point, to the sharply pointed tips of the snout, which is lower than in CHAPALÆ, being on a horizontal passing through middle of eye and thence through middle of body; greatest depth of body, 5.3 (4.7 to 5.3)[26] in length without caudal; least depth of caudal peduncle, 2.0 (1.8 to 2.2) in its length behind end of anal base, a little longer (or a little shorter) than length of snout. Length of head (including opercular membrane), 3.3 (3.2 to 3.6) in length of body without caudal. Fore part of head rather elongate, and sharply pointed whether viewed from above or from the side; posterior margin of eye midway between tip of snout and lower end of pectoral base; length of eye, 3.6 (3.4 to 3.8); length of snout, 3.35 (3.2 to 3.6); least interorbital width, 5.4 (4.4 to 5.6). Premaxillaries sharply produced forward not quite so far as the symphysis of the mandibles; edge of premaxillaries curved less sharply than usual in CHIROSTOMA; upper jaw extended backward slightly beyond vertical from front of eye, its length 2.75 (2.4 to 2.8); mandible of moderate strength, its lower edge slightly concave near the symphysis; mandibular rami elevated within the mouth, the distance from its crest to the posterior end of the mandible contained about 1.6 times in its entire length (as in CHAPALÆ and GRANDOCULE); length of mandible, 2.4 (2.3 to 2.5) in head. Teeth small, arranged in two series, between which other teeth are inserted toward the front of the lower jaw; teeth of the inner premaxillary and outer mandibular series, somewhat enlarged; vomer apparently edentulous. Gill-rakers serrulate, 4 + 19 in the type, the longest as long as the pupil.

---

[26] The measurements and counts in parentheses are those of ten or more paratypes 60 to 74 mm. long, from La Palma.

Air bladder extended backward into tail over about one-third of the anal base. Vertebræ, 43 (in a paratype).

Scales rather small, reduced in size near head, in 58 (53 to 63) series from edge of scapular arch above gill opening to end of hypural; in 18 (17 to 19) series above anal origin, in 11 (10 to 13) series between origins of dorsals. Scale margins broadly rounded and weakly crenate in adult, pointed and scarcely crenate in the young.

Fin rays: dorsal, IV (IV to VI)–I, 11 (11 or 12); anal, I, 20 (18 to 21); pectoral, 15 (14 to 16). Origin of spinous dorsal over tips of ventrals (varying somewhat), midway between base of caudal and end of second (or first) third of length of snout (rarely slightly nearer tip of snout than base of caudal); first dorsal when depressed extending backward more than two-thirds the distance to the second dorsal, its length thus measured contained 3.4 (3.5 to 2.9) times in the head; second (or first) spine longest. Second dorsal decidedly higher than long; its edge slightly falcate. Anal slightly higher than second dorsal; its base equal to length of head to preopercular ridge (or middle of opercle). Pectoral pointed, its lower margin straight; the fin overlying about half the length of the depressed ventral, which reaches nearly (or quite) to the anus; length of pectoral, 1.6 (1.3 to 1.6) in head.

This species is doubtless translucent in life; even in preserved specimens the fore part of the head is almost transparent (opaque in GRANDOCULE). The coloration is like that of CHAPALÆ, which was thus described: "a silvery band one scale wide, bright and distinct posteriorly, becoming indistinct anteriorly; upper edge of lateral band dusky; scales on dorsal part of body edged with dark dots; jaws with dark dots; upper part of eye black; the dark, pigmented arachnoid shows through the skull." Fins all clear.

124. **Chirostoma grandocule** (Steindachner), 1894.St.

ATHERINICHTHYS GRANDOCULIS (Steindachner), *Ans. Akad. Wiss. Wien*, **31**, 149, 1894.
CHIROSTOMA GRANDOCULE Steindachner, *Denk. Akad. Wiss. Wien*, **62**, 525, pl. 2, fig. 1, 1895; Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **47**, pt. 3, 2839, 1898; Meek, *Publ. Field Mus. (Zool.)*, **3**, 115, 1902 (in part); **5**, 176, 1904 (in part).
CHIROSTOMA GRANDOCULIS Regan, *Biol. Centr.-Amer., Pisces*, 61, 1907 (in part).
Type-locality.—Lake Pátzcuaro.
Range.—Lake Pátzcuaro, Mexico.

As far as known, this species is confined to Lake Pátzcuaro, the specimens recorded by Meek from Lake Chapala representing a distinct species, here described as C. CONSOCIUM. For use in comparing the two species, we add here the following measurements and counts of six topotypes of C. GRANDOCULE, 79 to 82 mm. long to caudal.

Depth of body, 5.2 to 5.5, length of head (including opercular membrane), 3.5 to 3.75; length of eye, 3.8 to 4.1; snout, 3.4 to 3.5; mandible, 2.4 to 2.65; scales in the median longitudinal series, 60 to 72; in a transverse series above anal origin, 16 to 19; in a series between origins of dorsals, 9 to 12; dorsal rays, V–I, 11 or 12; anal, I, 18 to 21.

125. **Chirostoma promelas** Jordan and Snyder, 1900.St.

(Plate VIII, Figs. 29, 30)

CHIROSTOMA PROMELAS Jordan and Snyder, *Bull. U. S. Fish Comm.*, **19**, 136, fig. 14, 1899 (1900); Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **47**, pt. 4, 3160, 1900; Pellegrin, *Bull. Mus. Hist. Nat. Paris*, **7**, 205, 1901; Evermann and Goldsborough, *Bull. U. S. Fish Comm.*, **21**, 152, 1901 (1902); Meek, *Publ. Field Mus. (Zool.)*, **3**, 115, 1902; **5**, 177, 1904; Regan, *Biol. Centr.-Amer., Pisces*, 62, 1907.
Type-locality.—"Market of Guadalajara, Jalisco, Mexico; said to have come from Laguna de Chapala."
Range.—Lake Chapala, Mexico.

In C. PROMELAS, as in the other species of the genus, the lower jaw is very strong; in this species alone, however, the premaxillaries are so sharply and extensively produced forward, obviously as a secondary variation, that they project beyond the mandibular symphysis.

126. **Chirostoma lucius** Boulenger, 1900.St.

(Plate VIII, Fig. 31)

CHIROSTOMA LUCIUS Boulenger, *Ann. Mag. Nat. Hist.* (7), **5**, 54, 1900 (in part, *fide* Regan); Jordan, *Bull. U. S. Fish Comm.*, **19**, 137, 1899 (1900) (footnote); Meek, *Publ. Field Mus. (Zool.)*, **3**, 115, 1902; **5**, 178, fig. 60, 1904; Regan, *Biol. Centr.- Amer., Pisces*, 62, 1907.
Type-locality.—Lake Chapala.

CHIROSTOMA CRYSTALLINUM Jordan and Synder, *Bull. U. S. Fish Comm.*, **19**, 139, figs. 16, 17, 1899 (1900); Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **47**, pt. 4, 3162, 1900.

Type-locality.—"Laguna de Chapala, near Ocotlan, Jalisco, Mexico."

Range.—Lake Chapala, Mexico.

127. **Chirostoma diazi** Jordan and Snyder, 1900.St.

(Plate VIII, Fig. 32)

CHIROSTOMA DIAZI Jordan and Snyder, *Bull. U. S. Fish Comm.*, **19**, 137, fig. 15, 1899 (1900); Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **47**, pt. 4, 3161, 1900; Regan, *Biol. Centr.-Amer., Pisces*, 62, 1907.

Type-locality.—"Market of Guadalajara, Jalisco, Mexico, . . . said to have come from Lake Chapala."

CHIROSTOMA SPHYRÆNA Jordan, *Bull. U. S. Fish. Comm.*, **19**, 137, 1899 (1900) (footnote); Meek, *Publ. Field Mus.* (*Zool.*) **3**, 116, 1902; **5**, 177, fig. 59, 1904 (not C. SPHYRÆNA Boulenger, *fide* Regan, *l. c*).

Range.—Lake Chapala, Mexico.

128. **Chirostoma sphyræna** Boulenger, 1900.St.

(Plate IX, Figs. 35, 36)

CHIROSTOMA SPHYRÆNA Boulenger, *Ann. Mag. Nat. Hist.* (7), **5**, 55, 1900; Regan, *Biol. Centr.-Amer., Pisces*, 63, pl. 9, fig. 2, 1908.

Type-locality.—Lake Chapala, Mexico.

CHIROSTOMA LERMÆ Jordan and Snyder, *Bull. U. S. Fish. Comm.*, **19**, 142, fig. 19, 1899 (1900); Jordan and Evermannn, *Bull. U. S. Nat. Mus.*, **47**, pt. 4, 3163, 1900; Meek, *Publ. Field Mus. (Zool.)*, **3**, 116, 1902; **5**, 179, fig. 61, 1904.

Type-locality.—"Market of Guadalajara; said to have come from Laguna de Chapala, Jalisco, Mexico."

Range.—Lake Chapala, Mexico.

The teeth are stronger in this species than in any other American atherinid. They are set in sockets, which are, however, shallower than those of SPHYRÆNA, which genus this species greatly resembles. The teeth are usually in two series, but a third series in some specimens is interpolated between the main two.

A young specimen from La Palma, 74 mm. long to caudal, shows all the distinctive features of the species.

129. **Chirostoma ocotlane** Jordan and Snyder, 1900.St.

(Plate IX, Figs. 33, 34)

CHIROSTOMA LUCIUS Boulenger, *Ann. Mag. Nat. Hist.* (7), **5**, 54, 1900 (in part, *fide* Regan).

CHIROSTOMA OCOTLANE Jordan and Snyder, *Bull. U. S. Fish Comm.*, **19**, 140, fig. 18, 1899 (1900); Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **47**, pt. 4, 3163, 1900; Pellegrin, *Bull. Mus. Hist. Nat. Paris*, **7**, 205, 1901; Meek, *Publ. Field Mus.* (*Zool.*), **3**, 116, 1902; **5**, 180, fig. 62, 1904; Regan, *Bio. Centr.-Amer., Pisces*, 62, pl. 9, fig. 1, 1907.

Type-locality.—"Lago de Chapala, near Ocotlan, Jalisco, Mexico."

Range.—Lake Chapala, Mexico.

130 Chirostoma estor Jordan, 1879.$^{St.}$

CHIROSTOMA ESTOR, Jordan, *Proc. U. S. Nat. Mus.*, **2**, 298, 1879; Steindachner, *Denk. Akad. Wiss. Wien*, **62**, 523, 1895; Jordan and Snyder, *Bull. U. S. Fish Comm.*, **19**, 141 (footnote), 1899 (1900); Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **47**, pt. 3, 2839, 1898; pt. 4, 3165, 1900; Meek, *Publ. Field. Mus. (Zool.)*, **3**, 116, 1902; **5**, 180, 1904; Regan, *Biol. Centr.-Amer., Pisces*, 60, 1907.

LETHOSTOLE ESTOR Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **47**, pt. 1, 792, 1896.

Type-locality.—"Lake Chapala." (Perhaps by error. The type was sent to the U. S. National Museum by Dr. Alfredo Dugés of Guanajuato as "Pescado Blanco de Chapala," but subsequent collectors have not found it in Lake Chapala, while it abounds in Lakes Pátzcuaro, Zirahuen, and Xochimilco.)

ATHERINICHTHYS ALBUS Steindachner, *Anz. Akad. Wiss. Wien*, **31**, 148, 1894.

CHIROSTOMA ALBUM Jordan and Snyder, *Bull. U. S. Fish Comm.*, **19**, 141 (footnote), 1899 (1900); Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **4**, 3165, 1900.

Type-locality.—Lake Pátzcuaro, Mexico.

Range.—Lakes in the Lerma Basin and the Valley of Mexico (known from Lakes Pátzcuaro, Zirahuen, and Xochimilco).

This species is very similar to its congener, C. HUMBOLDTIANUM, but may be at once distinguished by the much smaller size of its scales.

As Dr. Meek has noted, the series from Lakes Pátzcuaro, Zirahuen, and Xochimilco are not wholly similar. Those from Xochimilco (like some examples of C. REGANI and C. HUMBOLDTIANUM from the same lake), are unusually light in color; they also have the head longer and narrower than in the others. The head is usually contained about 3.3 times in the length without caudal in specimens from Xochimilco; 3.5 times in those from Pátzcuaro; 3.7 times in those from Zirahuen. But in one from Zirahuen the proportion is 3.4, as in some from Pátzcuaro and Xochimilco. This difference is apparently to be regarded as racial rather than specific.

Teeth usually arranged in two or three series anteriorly, occasionally forming a narrow band; enlarged in the outer mandibular and inner premaxillary series.

XXXIII. LEURESTHES Jordan and Gilbert, 1880.

LEURESTHES Jordan and Gilbert, *Proc. U. S. Nat. Mus.*, **3**, 29, 1880; *Bull. U. S. Nat. Mus.*, **16**, 405, 1883; Jordan and Evermann, *ibid.*, **47**, pt. 1, 801, 1896.

Orthotype.—ATHERINOPSIS TENUIS Ayres.

Range.—Coasts of California and Lower California.

131. Leuresthes tenuis (Ayres), 1860.$^{St.}$

(Plate XI, Fig. 39, from Photograph by Thompson)

ATHERINOPSIS TENUIS Ayres, *Proc. Cal. Acad. Nat. Sci.*, 76, 1860.

LEURESTHES TENUIS Jordan and Gilbert, *Proc. U. S. Nat. Mus.*, **3**, 29, 1880; *Bull U. S. Nat. Mus.*, **16**, 405, 1883; Jordan and Evermann, *ibid.*, **47**, pt. 1, 802; Hubbs, *Univ. Cal. Publ., Zool.*, **16**, 160, 1916; Osburn and Nichols, *Bull.*

Amer. Mus. Nat. Hist., **35**, 155, 1916; Jordan, *Copeia*, No. 56, 46, 1918; Barnhart, *Cal. Fish and Game*, **4**, 181, 1918; Thompson, *Bull. Cal. Fish and Game Comm.*, No. 3, 1-29, figs. 1-9 (babits), 1919; Higgins, *ibid.*, No. 5, 156, 1919; Thompson, *ibid.* 201, 203.

Type-locality.—San Francisco Bay.

LEURESTHES CRAMERI Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **47**, pt. 1, 802.

Type-locality.—Ballenas Bay, Cape Abreojos, Lower California.

Osburn and Nichols (1916) and Jordan (1918) seem to have demonstrated the identity of LEURESTHES CRAMERI with L. TENUIS, the form called CRAMERI living in the open sea, the original TENUIS in San Francisco Bay. The alleged difference in size of the scales does not hold.

The remarkable spawning habits of this species, locally known as the "Grunion," although popularly well known, were first mentioned in scientific literature by the junior author in 1916. Subsequently Mr. Percy S. Barnhart observed and reported in some detail on the phenomena, but it has remained for Mr. Will F. Thompson to determine the nature of the marvelous adaptations and adjustments involved. It appears that in six months of the year, chiefly March, April, May, and June, just after the crest of the latter high tides of the full-moon series, the grunion leaves the surf in large numbers, being washed high on the beach by the largest breakers. The eggs are then fertilized and laid well down in the sand, where they are covered still deeper by the deposition of sand which takes place on this level of the beach only during the complex of tide conditions noted above.

"The story concluded by the escape of the larvæ into the surf comprises one of the most marvelous of the many strange chapters in the life histories of fish. It is eloquent of exquisite adaptation to a seemingly minor physical phenomenon—the erosion of the beach by one part of a wave, and its upbuilding by another. Those waves are made use of which carry the fish high on the beach; those parts of the tide are utilized which allow the pods of eggs to be laid without risk that further rise of the tide will carry the eroded area over them; the runs occur during those nights in a series which are the last available, because of their height, thus eliminating in so far as possible the danger that unusually rough weather will sweep away the eggs; and the eggs are laid during those series of the tides which will allow the escape of the larvæ two weeks later. The larvæ themselves do not hatch until the sand over them is swept away, even though a month pass by; but when the time comes and the waves of the high tide wash over them, eroding the surrounding sand, they are ready to escape. The eggs are laid in what is nearly dry land, or moist soil, a fact which has no parallel in our knowledge of marine fishes. They are subject to attack by terrestrial enemies, but escape the far more numerous marine enemies. Indeed, so advantageous to the species are these adaptations that the female lays thousands of eggs, where millions are laid by other forms"—Thompson (*l. c.*).

The eggs of LEURESTHES lack the long filament developed in MENIDIA and other genera, and considered as characteristic of the family. This is probably a generic character, confirming the distinctness of LEURESTHES from MENIDIA.

XXXIV. LABIDESTHES Cope, 1870.

LABIDESTHES Cope, *Proc. Amer. Phil. Soc.*, 455, 1870; Jordan and Gilbert, *Bull. U. S. Nat. Mus.*, **16**, 405, 1883; Jordan and Evermann, *ibid.*, **47**, pt. 1, 805, 1896.

Orthotype.—CHIROSTOMA SICCULUM Cope.

Range.—Fresh waters of eastern United States.

132. Labidesthes sicculus (Cope), 1865.$^{St.}$

CHIROSTOMA SICCULUM Cope, *Proc. Acad. Nat. Sci. Phila.*, 81, 1865.

LABIDESTHES SICCULUS Cope, *Proc. Amer. Phil. Soc.*, 455, 1870; Jordan and Evermann, *Bull. U. S. Nat. Mus.*, **47**, pt. 1, 805, 1896, and of authors in general.

Type-locality.—Grosse Isle, Detroit River.

Range.—Streams, lakes and ponds from the Great Lakes Region of North America southward to Texas and Florida. A most graceful little fish.

XXXV. XENATHERINA Regan, 1908.

XENATHERINA Regan, *Biol. Centr.-Amer., Pisces*, 64, 1907; Jordan, *Proc. U. S. Nat. Mus.*, 309, 1919.

Orthotype.—MENIDIA LISA Meek.

Range.—East coast streams of southern Mexico.

This genus differs remarkably from all others in the family in squamation, the anterior part of the body being largely devoid of scales. In this respect it is approached only by the unrelated and even more aberrant genus Iso, of the western Pacific. The details of squamation are described by us in a recent publication (Jordan, 1919). XENATHERINA was probably derived from a type like THYRINA, which genus it resembles in several respects, such as the shortened belly, elongated anal fin, the extension of the air bladder a short distance into the urosome, and the slenderness of the mandibular rami. In addition to its peculiar squamation, XENATHERINA differs from the typical ATHERINOPSINÆ in the narrowly dilated premaxillaries, less curved and less restricted gape, and more slender mandibular rami.

133. Xenatherina lisa (Meek), 1904.$^{St.}$

(Plate X, Fig. 37)

MENIDIA LISA Meek, *Publ. Field Mus. (Zool.)*, **5**, 182, fig. 63, 1904 (figure poor).

XENATHERINA LISA Regan, *Biol. Centr.-Amer., Pisces*, 64, 1907; Jordan, *Proc. U. S. Nat. Mus.*, 309, fig. 1, 1919.

Type-locality.—Refugio, Vera Cruz, Mexico, in the Rio Tonto, a tributary of the Rio Papaloapam.

Range.—Basin of the Rio Papaloapam, eastern Mexico (known only from the type locality).

The specimens from El Hule, mentioned in the original description of LISA, belong to a very different species, ARCHOMENIDIA SALLEI.

XXXVI. COLPICHTHYS Hubbs, 1918.

COLPICHTHYS Hubbs, *Proc. Acad. Nat. Sci. Phila.* 67, 1917 (1918).
Orthotype.—ATHERINOPS REGIS Jenkins and Evermann.
Range.—Gulf of California.

This group may be regarded as a subgenus of ATHERINOPS. For the present, however, we grant it separate standing.

134. Colpichthys regis (Jenkins and Evermann), 1888.

ATHERINOPS REGIS Jenkins and Evermann, *Proc. U. S. Nat. Mus.*, 11, 138, 1888; *ibid.*, 14, 137, 1891; Jordan and Evermann, *Bull. U. S. Nat. Mus.*, 47, pt. 1, 807, 1896; Hubbs, *Bull. Amer. Mus. Nat. Hist.*, 419, 1918.
Type-locality.—Guaymas, Sonora.
Range.—Gulf of California; thus far recorded only from Guaymas.

XXXVII. ATHERINOPS Steindachner, 1875.

ATHERINOPS Steindachner, *Ichth. Beit.*, 3, 61, 1875; *Sitzb. Akad. Wiss. Wien*, 72, 89, 1875; Jordan and Evermann, *Bull. U. S. Nat. Mus.*, 47, pt. 1, 807, 1896; Hubbs, *Bull. Amer. Mus. Nat. Hist.*, 38, 409-440, 1918.
Orthotype.—ATHERINOPSIS AFFINIS Ayres.
Range.—Outer coast and adjacent islands of Lower California, California, and Oregon.

This genus in external characters bears a very strong resemblance to ATHERINOPSIS. The teeth, however, being Y-shaped or forked, are remarkably different.

135a. Atherinops affinis affinis (Ayres), 1860.St.

(Plate X, Fig. 38; Plate XII, Fig. 41)

ATHERINOPSIS AFFINIS Ayres, *Proc. Cal. Acad. Nat. Sci.*, 63, 1860.
ATHERINOPS AFFINIS AFFINIS Hubbs, *Bull. Amer. Nat. Hist.*, 38, 420, 1918 (full synonymy).
Type-locality.—San Francisco, California.
ATHERINOPS OREGONIA Jordan and Snyder, *Proc. U. S. Nat. Mus.*, 45, 575, pl. 46, 1913.
Type-locality.—Yachats River, Oregon.
Range.—Coast of Oregon and of California south to Monterey; including mouths of streams. South of Monterey A. A. AFFINIS intergrades with A. A. LITTORALIS.

It seems probable that examples of this species were among Girard's original types of ATHERINOPSIS CALIFORNIENSIS.

135b. Atherinops affinis littoralis Hubbs, 1918.St.

ATHERINOPS AFFINIS Auctorum, in part.
ATHERINOPS AFFINIS LITTORALIS Hubbs, *Bull. Amer. Mus. Nat. Hist.*, 38, 426, 1918.
Type-locality.—North Island, San Diego Bay, California.

Range.—Coast of southern California, intergrading northward with A. A. AFFINIS, and southward with A. A. MAGDALENÆ.

This subspecies occurs in the mouth of San Diego Bay, and in the ocean at Coronado Beach.

135c. Atherinops affinis magdalenæ (Fowler), 1904.$^{St.}$

ATHERINOPS MAGDALENÆ Fowler, *Proc. Acad. Nat. Sci. Phila.*, 740, pl. 42, 1903 (1904), lower figure.

ATHERINOPS AFFINIS MAGDALENÆ Hubbs, *Bull. Amer. Mus. Nat. Hist.*, 38, 429, 1918.

Type-locality.—Magdalena Bay.

Range.—Southwestern coast of Lower California.

136a. Atherinops insularum insularum Gilbert, 1891.$^{St.}$

ATHERINOPS INSULARUM Gilbert, *Proc. U. S. Nat. Mus.*, 14, 549, 1891 (in part).

ATHERINOPS INSULARUM INSULARUM Hubbs, *Bull. Amer. Mus. Nat. Hist.*, 38, 432, 1918 (complete synonymy).

Type-locality.—San Clemente Island (now definitely restricted).

Range.—Shores of the Santa Barbara Islands, off southern California.

136b. Atherinops insularum cedroscensis Hubbs, 1918.$^{St.}$

ATHERINOPS INSULARUM CEDROSCENSIS Hubbs, *Bull. Amer. Mus. Nat. Hist.*, 38, 434, 1918.

Type-locality.—Southeast side of Cedros Island.

Range.—Shores of Cedros and San Benito Islands, off the coast of central Lower California.

136c. Atherinops insularum guadalupæ Hubbs, 1918.$^{St.}$

ATHERINOPS INSULARUM GUADALUPÆ Hubbs, *Bull. Amer. Mus. Nat. Hist*, 38, 435,

Type-locality.—Guadalupe Island.

Range.—Guadalupe Island, off Lower California.

XXXVIII. ATHERINOPSIS Girard, 1854.

ATHERINOPSIS Girard, *Proc. Acad. Nat. Sci. Phila.*, 7, 134, 198, 1854; Jordan and Gilbert, *Bull. U. S. Nat. Mus.*, 16, 409, 1883; Jordan and Evermann, *ibid.*, 47, pt. 1, 806, 1896.

Haplotype.—ATHERINOPSIS CALIFORNIENSIS Girard.

Range.—Western coast of temperate North America.

137. Atherinopsis sonoræ Osburn and Nichols, 1916.

ATHERINOPSIS SONORÆ Osburn and Nichols, *Bull. Amer. Mus. Nat. Hist.*, 35, 156, fig. 8, 1916.

Type-locality.—Southeast side of Cedros Island, Lower California.

Range.—Cedros Island, Lower California.

138. Atherinopsis californiensis Girard, 1854.$^{St.}$

(Plate XII, Fig. 42)

ATHERINOPSIS CALIFORNIENSIS Girard *Proc. Acad. Nat. Sci. Phila.*, 7, 134, 1854; *U. S. Pac. R. R. Surv.*, 10, pt. 4, 103, pl. 22c, 1858; *Boston Journ. Nat. Hist.*, 6, 537, pl. 24, figs. 1-4, 1858; Jordan and Gilbert, *Bull. U. S. Nat. Mus.*, 16, 409, 1883; Jordan and Evermann, *ibid.*, 47, pt. 1, 806, 1896; 4, pl. 125, fig. 341, 1900; Fowler, *Proc. Acad. Nat. Sci. Phila*, 40, 739, 1904; Halkett, *Check List Fishes Canada*, 75, 1913; Osburn and Nichols, *Bull. Amer. Mus. Nat. Hist.*, 35, 156, 1916; Hubbs. *ibid.*, 38, 410, 1918.

Atherinichthys californiensis Günther, *Catalogue Fishes Brit. Mus.*, 3, 406, 1861.

Chirostoma californiense Jordan and Gilbert, *Proc. U. S. Nat. Mus.*, 3, 29, 1880.

Atherina storeri Ayres, in Girard, *Proc. Acad. Nat. Sci. Phila.*, 136, 1856 (*nom. nud.*).

Type-locality.—San Francisco.

Range.—Coasts and adjacent islands of western North America, from San Francisco south to Ballenas Bay, Lower California, and (according to Halkett) north to British Columbia.

The original description of this species is very brief and perhaps included specimens of Atherinops affinis.

XXXIX. BASILICHTHYS Girard, 1854.

Basilichthys Girard, *Proc. Acad. Nat. Sci. Phila.*, 7, 198, 1854; Thompson, *Proc. U. S. Nat. Mus.*, 50, 464, 1916 (not Basilichthys of authors in general, which is the group here termed Austromenidia).

Orthotype.—Atherina microlepidota Jenyns.

Protistius Cope, *Proc. Acad. Nat. Sci. Phila.*, 60, 1874; Fowler, *ibid.*, 40, 737, 1904.

Haplotype.—Protistius semotilus Cope.

Gastropterus Cope, *Proc. Amer. Phil. Soc.*, 17, 700, 1878 (name earlier used as Gastropteron, Gasteropteron, and Gasteroptera).

Gasteropterus Fowler, *Proc. Acad. Nat. Sci. Phila.*, 40, 738, 1904.

Haplotype.—Gastropterus archæus Cope.

Pisciregia Abbott, *Proc. Acad. Nat. Sci. Phila.*, 342, 1899; Jordan, *The Genera of Fishes* (Stanford University), 151, 1917.

Haplotype.—Pisciregia beardsleei Abbott.

Range.—Peru and Chile, in fresh and perhaps in salt water.

The South American atherinids with non-protractile premaxillaries are sufficiently differentiated from Atherinopsis of North America to warrant their generic separation. The characters of the genera in question are outlined in the key.

139. Basilichthys microlepidotus (Jenyns), 1842.$^{St.}$

Atherina microlepidota Jenyns, *Zool. Beagle*, 4, (*Fish*), 78, pl. 16, fig. 1, 1842; Guichenot, in Gay, *Hist. Chile, Zool.*, 2, 253, 1848; Kner, *Reise Novara, Fische*, 222, 1865.

Basilichthys microlepidotus Girard, *Proc. Acad. Nat. Sci. Phila.*, 7, 198, 1854; *U. S. Nav. Astron. Exp.*, 238, 1855.

Atherinopsis microlepidotus Thompson, *Proc. U. S. Nat. Mus.*, 50, 463, 1916.

Type-locality.—Valparaiso, Chile.

Range.—Streams and probably shores of Chile.

A reëxamination of Girard's figure and description of Basilichthys microlepidotus indicates conclusively that he was dealing with a species of the present genus, rather than with a species of Austromenidia, as formerly presumed by both Thompson and Hubbs. Although the premaxillaries are definitely stated to be protractile in Girard's description, his figure indicates the reverse. Among the diagnostic features of the present species the heavy projecting upper jaw, narrow suborbital, small first dorsal but high second dorsal and anal fins, the narrow, dull, lateral band, the fine, basally radiate scales, etc., are well indicated by Girard. These considerations remove any doubt regarding the pertinence of the name BASILICHTHYS to the present genus.

140. Basilichthys archæus (Cope), 1878.$^{St.}$

GASTROPTERUS ARCHÆUS Cope, *Proc. Amer. Phil. Soc.*, 17, 700, 1878; Eigenmann, *Repts. Princeton Univ. Exp. Patagonia*, 3, 464, 1910.

GASTEROPTERUS ARCHÆUS Fowler, *Proc. Acad. Nat. Sci. Phila.*, 40, 138, pl. 43, 1904, upper figure.

Type-locality.—Arequipa, on the Pacific slope of Peru; elevation, 7500 feet.

PISCIREGIA BEARDSLEEI Abbott, *Proc. Acad. Nat. Sci. Phila*, 342, 1899.

GASTROPTERUS BEARDSLEEI Eigenmann, *Repts. Princeton Univ. Exp. Patagonia*, 3, 464, 1910.

Type-locality.—Callao, Peru.

ATHERINOPSIS REGIUS Steindachner, *Denk. Akad. Wiss. Wien*, 72, 39, 1902; Evermann and Kendall, *Bull. U. S. Nat. Mus.*, 95, 45, 1917 (not ATHERINA REGIA Humboldt = AUSTROMENIDIA REGIA).

Range.—Andean streams and possibly coasts of Peru.

We provisionally recognize this species as distinct from B. MICROLEPIDOTUS, the scales being apparently not quite so fine. The two require further comparison, however. The species may also be the same as the next. It is possible that the type of PISCIREGIA BEARDSLEEI came from a river.

141. Basilichthys semotilus (Cope), 1874.$^{St.}$

PROTISTIUS SEMOTILUS Cope, *Proc. Acad. Nat. Sci. Phila.*, 66, 1875; Fowler, *ibid.*, 40, 737, pl. 44, 1904.

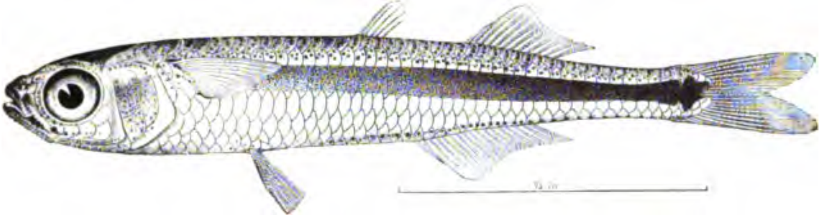
Type-locality.—Some portion of the Peruvian Andes; elevation said to be 12,000 feet.

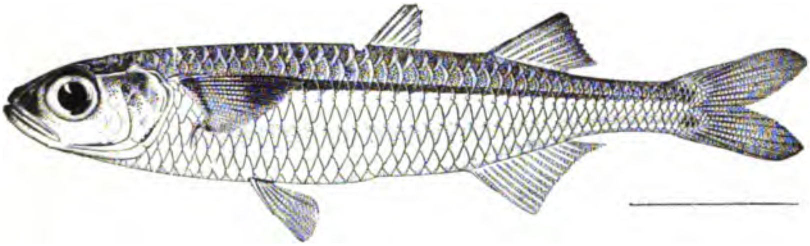
Range.—Pacific slope streams of the Peruvian Andes.

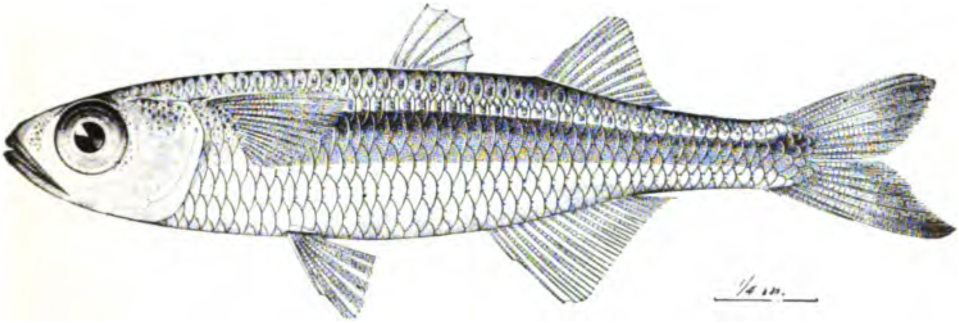
The specimen of PROTISTIUS SEMOTILUS before us comes from the Andes at an elevation of 7700-9000 feet. It was collected by Dr. Eigenmann in the Rimac River at Matucana, Peru. Head, 4.0; depth, 4.7; dorsal rays, I-I, 12; anal, I, 13; about 82 scales in the median longitudinal series; snout, 3.0; eye, 5.0; gill-rakers, 2 + 12; length to caudal, 100 mm.

Dr. Eigenmann, in a letter just received, notes the unexpected fact that the presence of but one dorsal spine, supposed to distinguish the genus PROTISTIUS from BASILICHTHYS, which has four or five, is wholly untrustworthy.

Of BASILICHTHYS (PROTISTIUS) SEMOTILUS, Dr. Eigenmann has specimens from Arequipa and Rio Rimac. "Of these, two have no dorsal spines whatever, nine have one, nine have two, one hundred have three, eighty-one have four, and six have five. Where is the line between PROTISTIUS and BASILICHTHYS? Of course, Cope's type of PROTISTIUS SEMOTILUS did not come from 12,000 feet elevation." (Eigenmann, *in lit.*, November, 1919.)







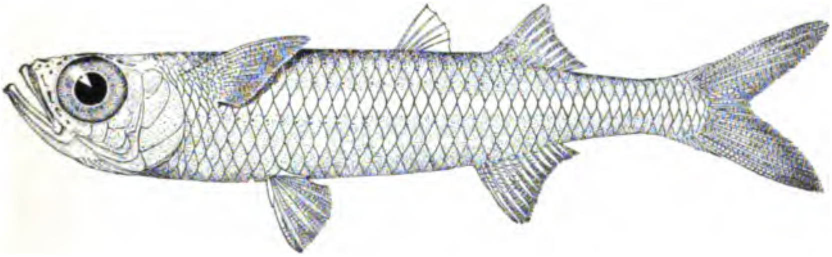
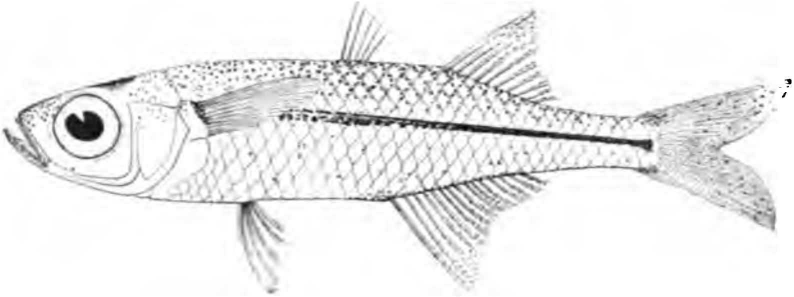
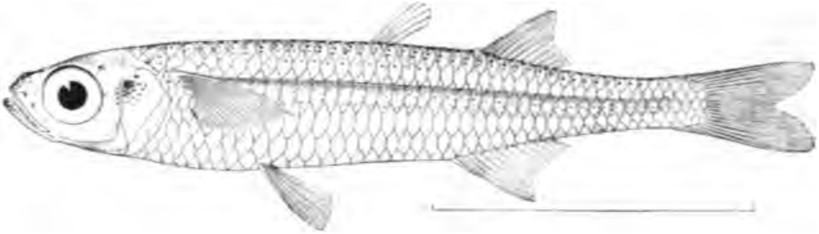
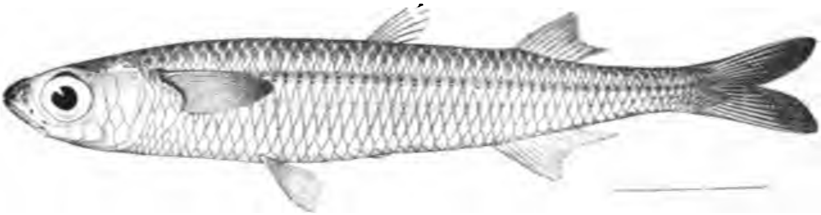


PLATE 1.

Figure 1. **Atherion elymus** Jordan & Starks; type. Misaki, Japan.
Figure 2. **Hepsetia morrisi** (Jordan & Starks); type. Yakushima, Japan.
Figure 3. **Hepsetia insularum** (Jordan & Snyder); type. Honolulu.
Figure 4. **Hepsetia stipes** (Müller & Troschel); Bahama.







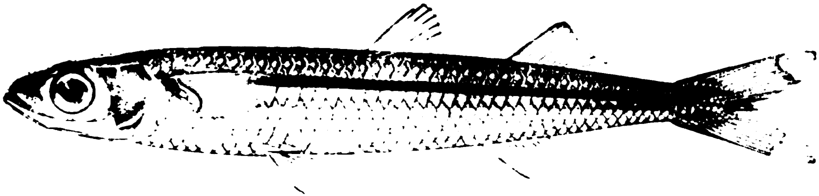
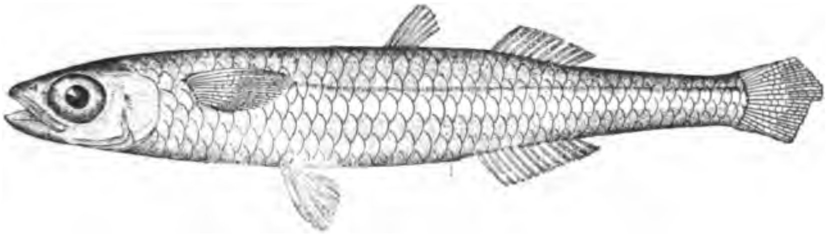
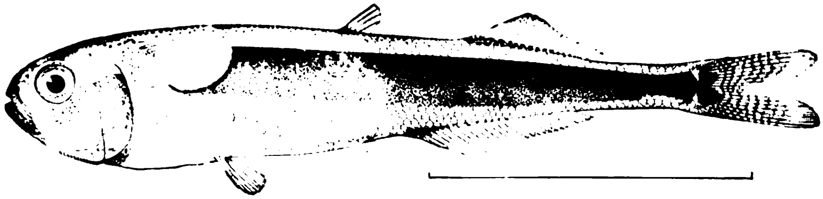
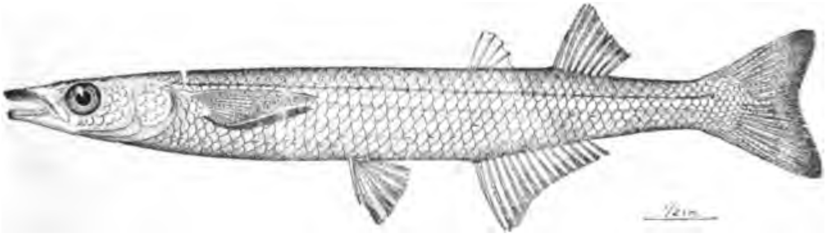


PLATE II.

Figure 5. Hepsetia evermanni (Eigenmann); type, San Cristobal, Cuba.
Figure 6. Atherina woodwardi Jordan and Starks; type, Okinawa, Riu Kiu, Japan.
Figure 7. Atherina tsurugae Jordan & Starks; type, Nagasaki.
Fig. 8. Atherina panatela Jordan & Richardson; type, Calayan Island, Philippines.







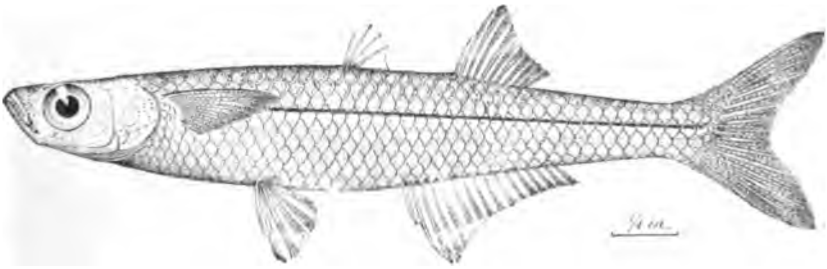
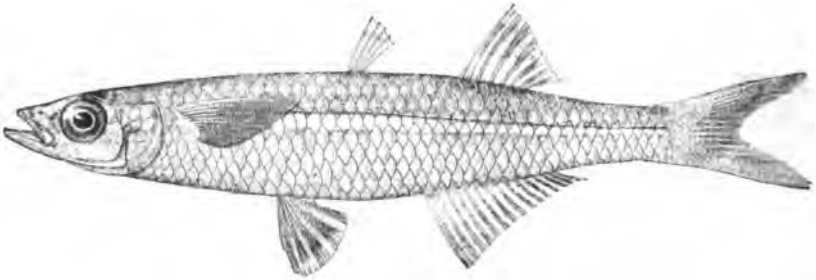
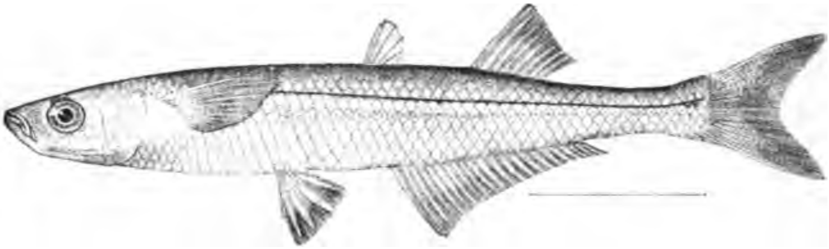
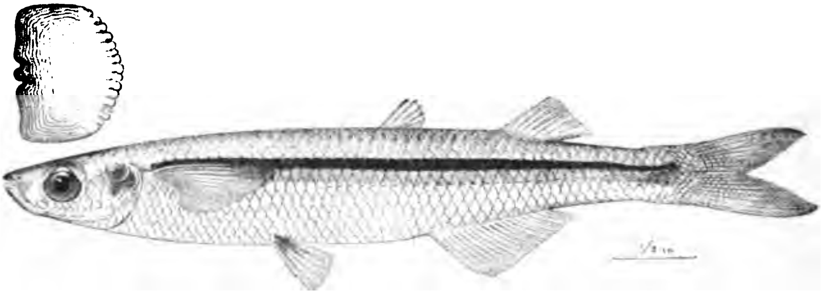


PLATE III.

Figure 9. ATHERINA ARÆA Jordan & Gilbert; type, Key West.
Figure 10. ISO FLOS-MARIS Jordan & Starks; type, Enoshima, Japan.
Figure 11. ODONTESTHES PERUGIÆ Evermann & Kendall; type, Argentina.
Figure 12. **MENIDIA BERYLLINA** (Cope); Potomac R.







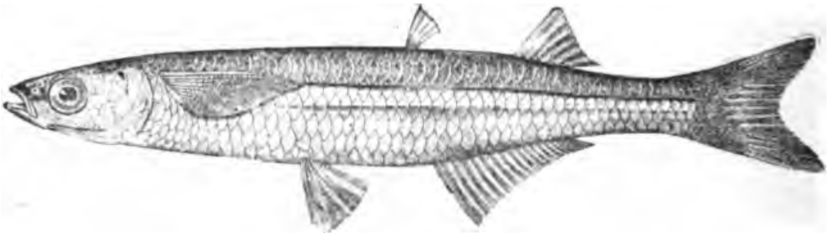
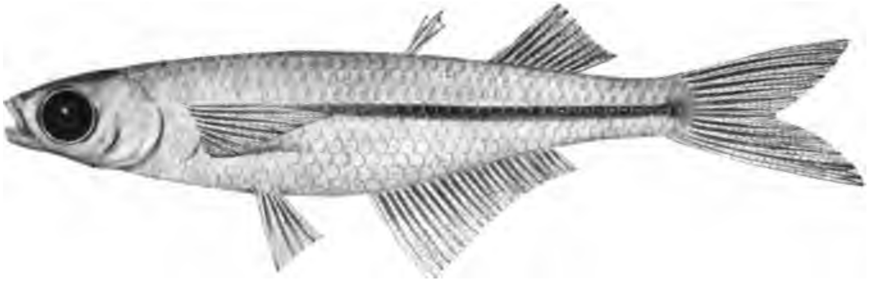
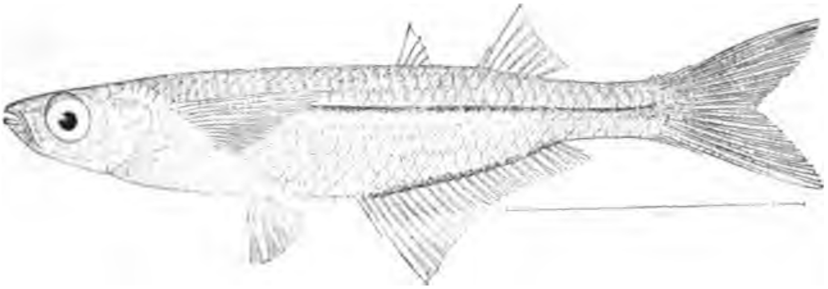
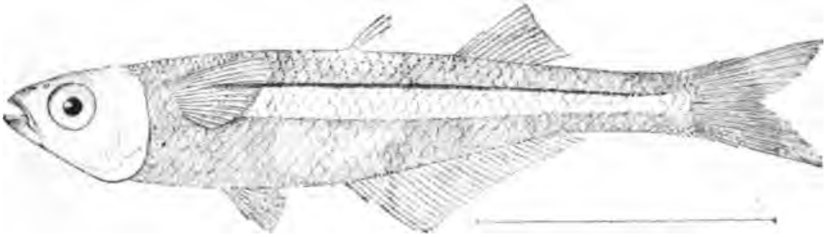


PLATE IV.

Figure 13. Menidia peninsulæ Goode & Bean; Pensacola.
Figure 14. Menidia notata (Mitchill); Wood's Hole, Mass.
Figure 15. Hubbesia gilberti (Jordan & Bollman); type, Panama.
Figure 16. Membras vagrans (Goode & Bean); Pensacola.







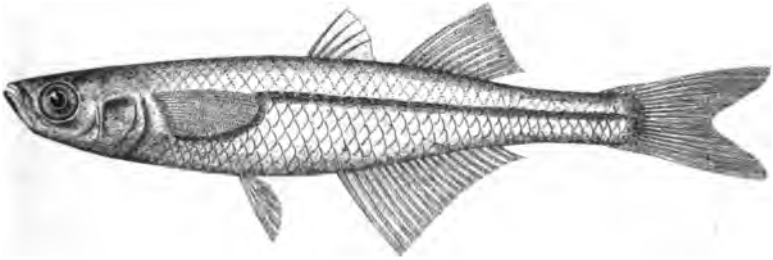


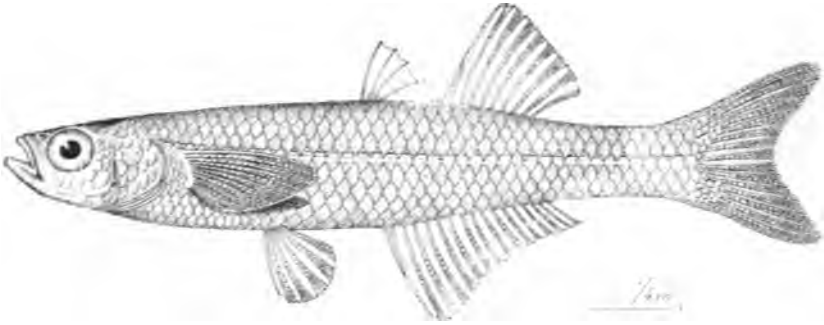
PLATE V.

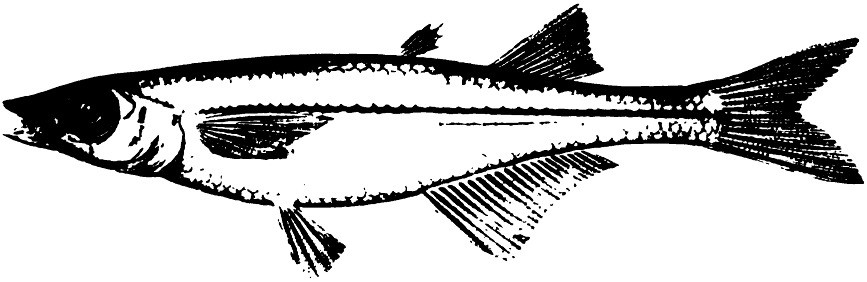
Figure 17. Thyrina balsana (Meek); type, Rio de las Balsas, Balsas, Guerrero.

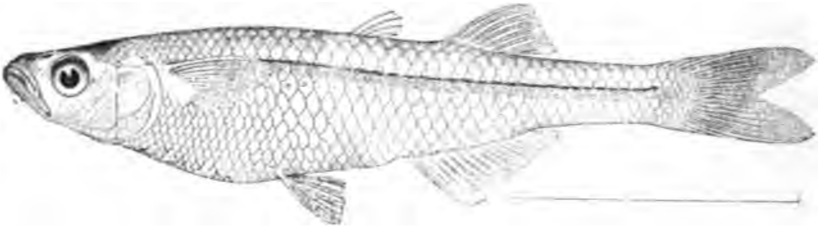
Figure 18. Thyrina evermanni Jordan & Culver; type, Astillero de Rio Presidio, Mazatlan.

Figure 19. Eurystole eriarcha (Jordan & Gilbert); type, Mazatlan.

Figure 20. Chirostoma mezquital Meek; type, Durango.







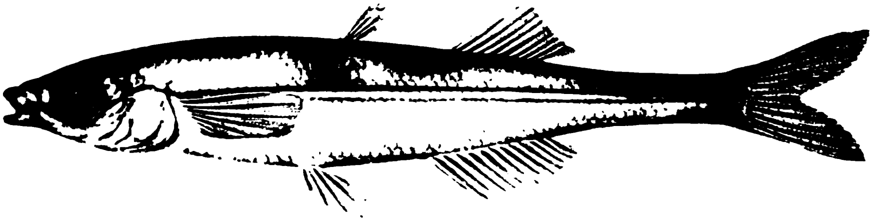


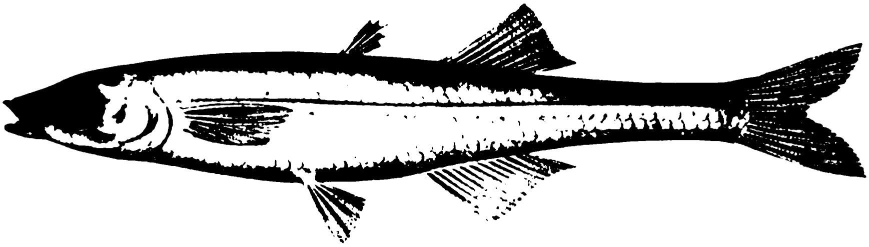
PLATE VI.

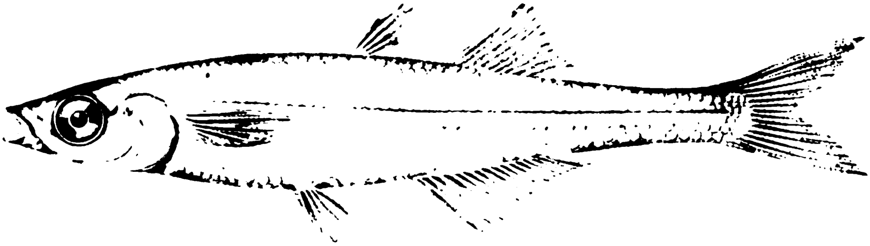
Figure 21. CHIROSTOMA JORDANI Woolman; type, Salamanca, Mexico.

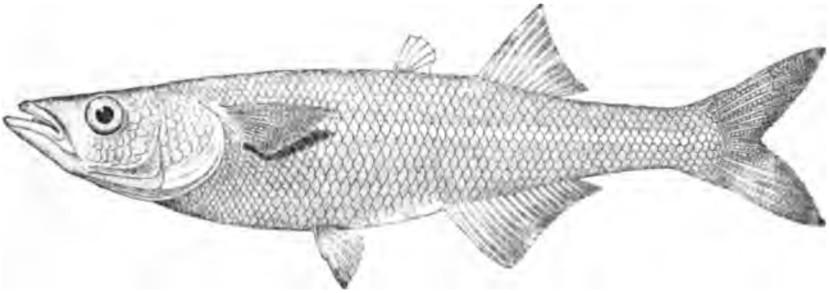
Figure 22. CHIROSTOMA LABARCÆ Meek; type, Rio Lerma, Labarca, Jalisco.

Figure 23. CHIROSTOMA ARGE Jordan & Snyder; type, Rio Verde, Aguas Calientes, Mexico.

Figure 24. CHIROSTOMA BARTONI Jordan & Evermann; type of CHIROSTOMA ATTENUATUM Meek, Lake Pátzcuaro, Michoacan.







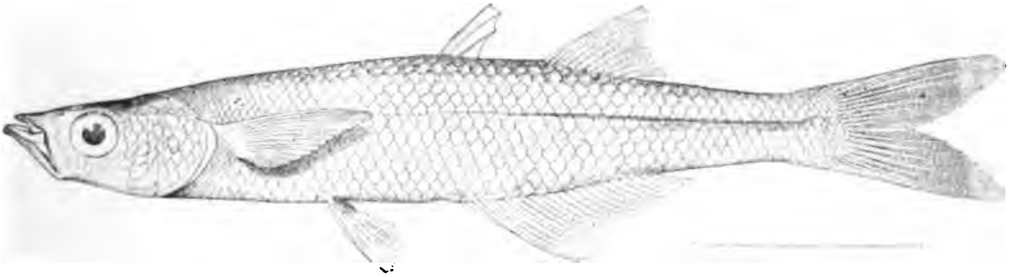
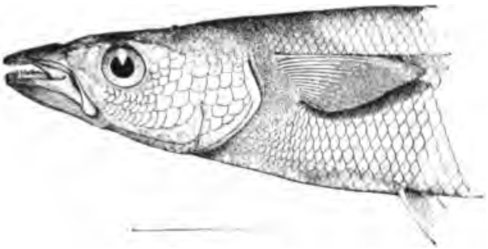
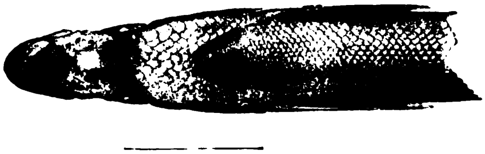
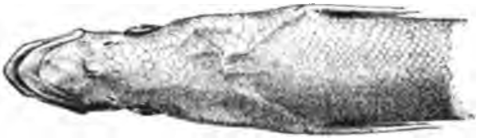


PLATE VII.

Figure 25. CHIROSTOMA ZIRAHUEN Meek; type, Lake Zirahuen, Michoacan.
Figure 26. CHIROSTOMA PATZCUARO Meek; type, Lake Patzcuaro.
Figure 27. CHIROSTOMA HUMBOLDTIANUM (Cuvier & Valenciennes); Lakes, Valley of Mexico.
Figure 28. CHIROSTOMA CHAPALÆ Jordan & Snyder; type, Lake Chapala, Jalisco.







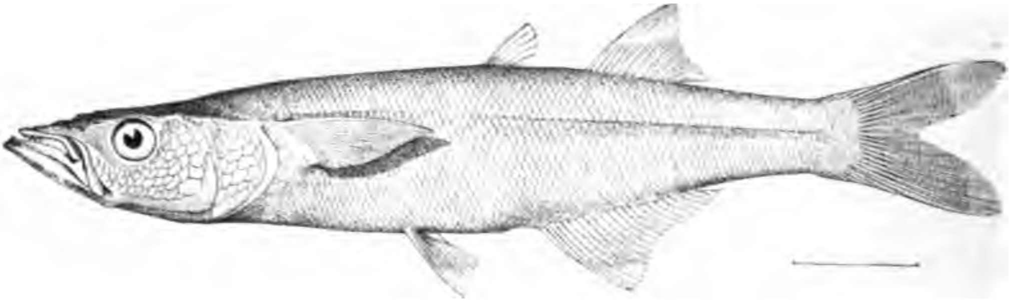
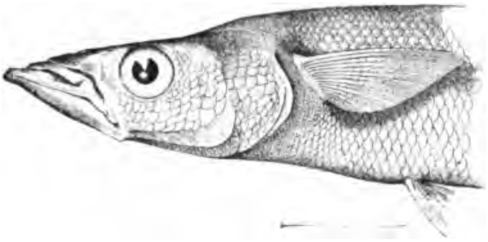


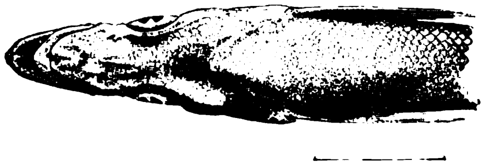
PLATE VIII.

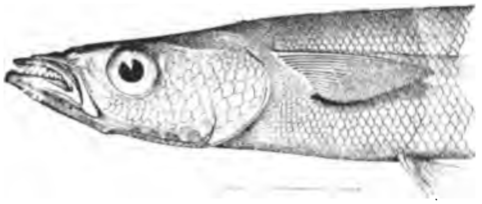
Figures 29, 30. Chirostoma promelas Jordan & Snyder; type. Lake Chapala, Jalisco.

Figure 31. Chirostoma lucius Boulenger; type of Chirostoma crystallinum Jordan & Snyder, Lake Chapala.

Figure 32. Chirostoma diazi Jordan & Snyder; type. Lake Chapala.







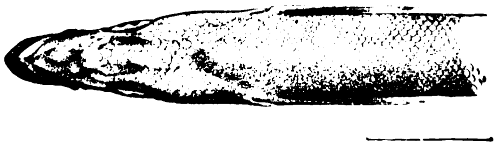
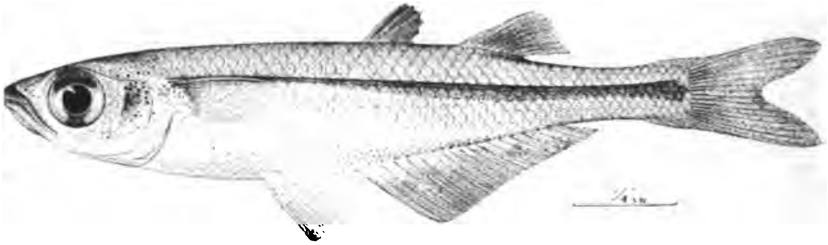


PLATE IX.

Figures 33, 34. CHIROSTOMA OCOTLANÆ Jordan & Snyder; type, Lake Chapala, Ocotlan, Jalisco.

Figures 35, 36. CHIROSTOMA SPHYRÆNA (Boulenger); type CHIROSTOMA LERMÆ Jordan & Snyder, Lake Chapala.



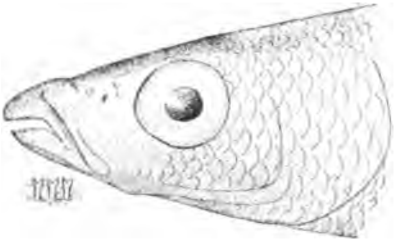
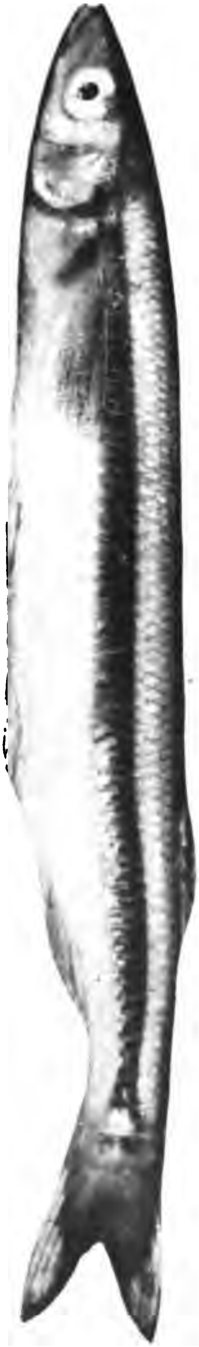


PLATE X.

Figure 37. Xenatherina lisa (Meek): type Rio Tonto, Refugio, Vera Cruz.
(The scaling is represented as too complete, most of the scales along sides being mere rudiments.)

Figure 38. Atherinops affinis (Ayres); San Francisco.



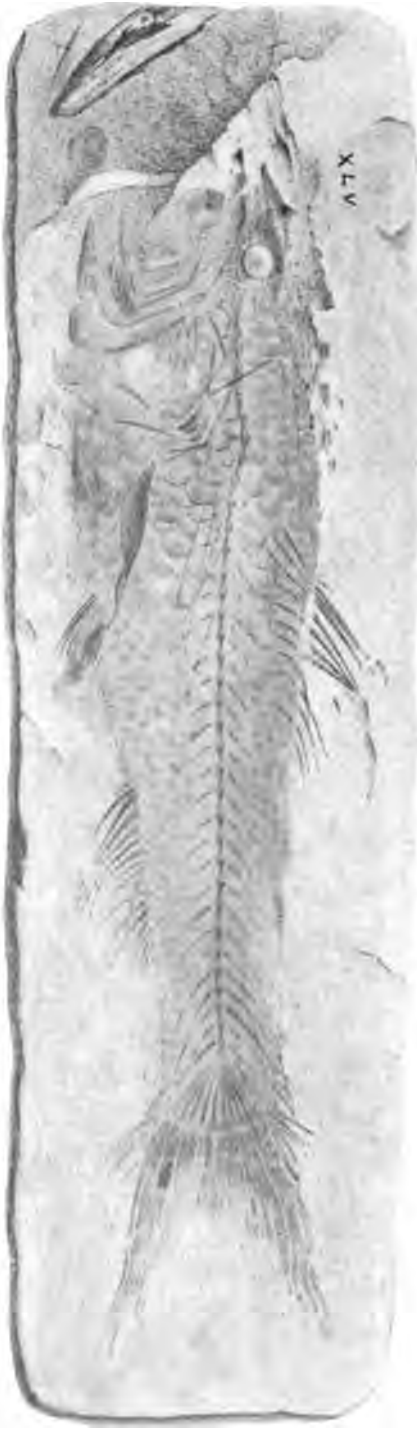
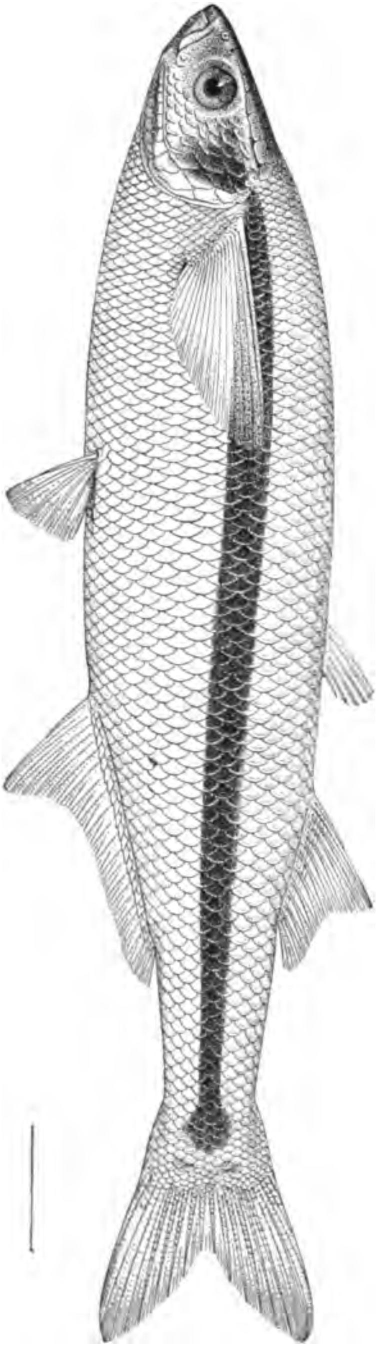


PLATE XI.

Figure 39. Leuresthes tenuis Ayres; Long Beach, California. (Photograph: the small first dorsal buried in sheath of scales.)

Figure 40. Zanteclites hubbsi Jordan & J. L. Gilbert; type, fossil, Miocene rocks, Bairdstown, Los Angeles.



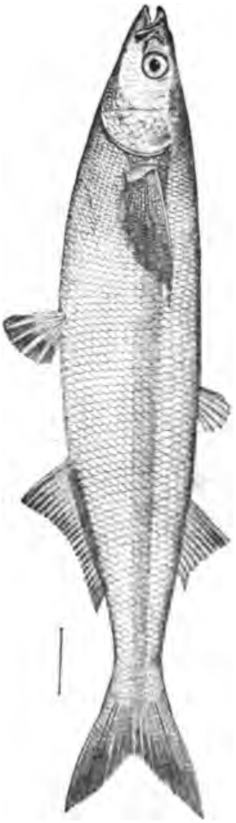


Fig. 42

PLATE XII.

Figure 41. Atherinops affinis (Ayres); type of Atherinops oregonia, mouth of Yachats River, Oregon.

Figure 42. Atherinops californiensis Girard; San Diego.

MAR 12 1920

LELAND STANFORD JUNIOR UNIVERSITY PUBLICATIONS
UNIVERSITY SERIES

Contributions Toward a Monograph of the Sucking Lice

PART I.

BY
GORDON FLOYD FERRIS
Instructor in Entomology

STANFORD UNIVERSITY, CALIFORNIA
PUBLISHED BY THE UNIVERSITY
1919

STANFORD UNIVERSITY
PRESS

CONTENTS

PAGE

Introduction 5
Genus Enderleinellus 7
  Enderleinellus nitzschi (Fahr.) 8
  Enderleinellus malaysianus n. sp. 12
  Enderleinellus menetensis n. sp. 14
  Enderleinellus larisci n. sp. 17
  Enderleinellus longiceps K. and F. 19
  Enderleinellus kelloggi Ferris 22
  Enderleinellus extremus n. sp. 24
  Enderleinellus venezuelæ n. sp. 25
  Enderleinellus platyspicatus n. sp. 26
  Enderleinellus dremomydis n. sp. 29
  Enderleinellus nannosciuri n. sp. 30
  Enderleinellus zonatus n. sp. 32
  Enderleinellus sciurotamiasis n. sp. 35
  Enderleinellus euxeri n. sp. 37
  Enderleinellus heliosciuri n. sp. 40
  Enderleinellus suturalis (Osborn) 42
  Enderleinellus osborni K. and F. 46
  Enderleinellus marmotæ n. sp. 47
  Enderleinellus tamiasis Fahr. 48
Genus Microphthirus new genus 49
  Microphthirus uncinatus (Ferris) 49

INTRODUCTION

This paper is the first of a proposed series, which when complete, it is hoped, will constitute what may justly be considered a monograph of the insect order Anoplura, or the sucking lice.

As a basis for this series of papers there is available what is without a doubt the largest and most comprehensive collection of these insects that is now in existence. This collection contains approximately three-fourths of the described species, among these being many that are known only from the extremely imperfect descriptions of the earlier authors. In addition to these, the collection includes a relatively very large number of new forms. With this material to begin with it is not unreasonable to hope that a nearly complete collection of the known species may finally become available for examination, and that this series of papers may thereby aspire to the dignity of a truly monographic study.

The sources of the material included in this collection are various, but by far the more significant portion has been obtained by the examination of the mammal skins in the collections of certain museums. It is the author's belief that in such collections there lies buried a nearly complete representation of the Anopluran fauna of the world, doubtless only a few of the species that occur on the larger mammals being lacking. It is perhaps not out of place to urge that the examination of such collections be undertaken whenever possible, nor, perhaps, is it out of place for the author to express a plea for additional material to the end that this monograph may be made as useful as possible.

Owing to the amount of new material, much of which belongs to types quite different from any that have been described, and to the necessary rearrangements that the examination of such a large percentage of the described forms will doubtless show to be advisable, all discussion of the group as a whole and all keys to the families and genera must of necessity be delayed until the final papers of the series.[1]

The final papers will also contain a complete host list, a bibliography, acknowledgments of the sources of material, and other matter of general interest.

The preliminary papers will, therefore, be of a purely descriptive character. The order in which the various genera will be dealt with will be governed entirely by convenience, those genera of which the most complete representation of described species is available being considered first. By thus leaving until the end the genera that are poorly represented it is hoped that opportunity will be given for the accumulation of additional material in these groups.

---

[1] **Keys to the genera (with the exception of a few recently named) together with a bibliographic catalog of species and a list of hosts will be found in the following reference: Ferris, G. F., "A Catalog and Host List of the Anoplura,"** ***Proceedings California Academy of Sciences,*** Series 4, **6**: 129–213, 1916.

The author is thoroughly convinced of the futility of written descriptions when dealing with objects of such complexity as are the members of this group. For this reason the emphasis throughout these papers will be placed upon the figures. The usual procedure is to regard the figures as merely explanatory of the text. In these papers the text will be regarded as being merely explanatory and confirmatory of the figures. The descriptions will consider only the more important characteristics of each species and these as briefly as is consistent with clarity.

All figures are from corrected camera lucida sketches made from individuals (the types whenever possible), that have been carefully prepared and in the majority of cases stained in order to permit more accurate observation. It is believed that the figures are accurate to a degree which is well within the limits of normal variation and the limits imposed by the processes through which the specimens pass in the course of their preparation for study. In all cases the figures have been drawn to the most convenient scale and are not to be used as a basis for judgment as to relative sizes. In all figures of the entire insect and of the genitalia (unless otherwise indicated) the left half of the figure represents the dorsal side, the right half the ventral side.

Keys to the species will not be given. It is the author's belief that the determination of species may be accomplished more quickly by reference to the name of the host and to the figures.

Finally, the benefit of criticism is desired that the standard of these papers may continuously be bettered and their usefulness increased.

SYSTEMATIC TREATMENT

Genus ENDERLEINELLUS Fahrenholz.

1912. Fahrenholz, *Zool. Anz.*, **39**: 56.
1912. Fahrenholz, 2., 3., u. 4, *Jahresb. des Niedersäch, zool. Ver. zu Hannover*, 52, 58.
1915. Kellogg and Ferris, Anoplura and Mall. N. Amer. Mammals, 40, Stanford University Publ.
1916. Ferris, Cat. and Host List of Anoplura, *Proc. Cal. Acad. Sci.* (4), **6**: 148.
1916. Fahrenholz, *Archiv f. Naturgesc.*, Abt. A, **81**: 29.

Anoplura without eyes; with five-segmented antennæ which are not sexually dimorphic; with the anterior and middle pairs of legs of equal size, small and weak and with weak claw, the posterior pair very stout and with broad, heavy claw; second sternite of the abdomen usually with a pair of small sclerites, each of which bears a backward-pointing, chitinous process; pleural plates present on a variable number of segments; each segment of the abdomen, both dorsally and ventrally, with at the most a single transverse row of spines or hairs; tergites and sternites of the abdomen without chitinized plates or with these very small; head more or less cylindrical, never with well-marked anterior-lateral and posterior-lateral angles; genitalia of the males of various types.

HOSTS. Confined, as far as known, to members of the rodent family *Sciuridæ*.

TYPE OF THE GENUS. *Enderleinellus nitzschi* Fahrenholz (= *Pediculus sphærocephalus* of Nitzsch, not of Olfers).

SYNONYMICAL LIST OF NAMES PREVIOUSLY USED IN THE GENUS

NOTE.—Synonyms are in italics.

kelloggi Ferris.
læviusculus (Grube).
    Linognathoides læviusculus (Grube).
longiceps Kellogg and Ferris.
nitzschi Fahrenholz.
    Pediculus sphærocephalus Nitzsch (not of Olfers).
    Hæmatopinus sphærocephalus (Nitzsch).
    Polyplax (?) sphærocephalus (Nitzsch).
    Enderleinellus sphærocephalus (Nitzsch).
osborni Kellogg and Ferris.
    Enderleinellus suturalis var. *osborni* Kellogg and Ferris.
Sphærocephalus (Nitzsch).
    nitzschi Fahrenholz.

suturalis (Osborn).
Hæmatopinus suturalis Osborn.
Polyplax (?) *suturalis* (Osborn).
Enderleinellus suturalis var. *occidentalis* Kellogg and Ferris.
suturalis var. *occidentalis* Kellogg and Ferris.
Enderleinellus suturalis (Osborn).
suturalis var. *osborni* Kellogg and Ferris.
Enderleinellus osborni Kellogg and Ferris.
tamiasis Fahrenholz.
uncinatus Ferris.
Microphthirus uncinatus (Ferris).

Notes.—The affinities of this genus are at present extremely obscure. All the species (excepting only *E. euxeri* n. sp.) agree in the possession of a pair of small chitinized areas on the second sternite of the abdomen, each of which bears a backward-pointing process, a character that appears in no other group. The homologies of these structures are doubtful, but it is possible that they represent portions of the first pair of pleural plates. Some support to this view is lent by the fact that in *E. suturalis* these chitinized areas are almost continuous with the first pair of pleurites and by the fact that in one other genus, *Fahrenholzia,* the first pair of plates are divided, one-half lying on the dorsal side and the other half on the ventral side. No evidence is afforded by the developmental stages as these areas on the second sternite appear only at the last ecdysis.

The one species, *E. euxeri* n. sp., in which these areas are lacking is in other respects sufficiently like the other members of the genus to render unnecessary any attempt to separate it generically. I am, however, removing from this genus the species previously described by me as *E. uncinatus.* Although the affinities of this remarkable little species are clearly with *Enderleinellus* it is so peculiar that it well merits special recognition.

Fahrenholz has recently referred *Pediculus læviusculus* Grube to *Enderleinellus.* This species was described from *Citellus eversmanni.* I have at hand two species from this host, one an *Enderleinellus,* the other a *Linognathoides.* The original description of *P. læviusculus* is extremely brief and the figure crude, but there are certain points about both which leave no doubt that the species to which they refer is the *Linognathoides* and not the *Enderleinellus.*

The immature stages of but few species of this genus are at hand, and of these it is almost exclusively the penultimate stage that is represented. This stage differs from the adult chiefly in the absence of the paired sclerites on the second sternite and in a general reduction in the number of spines.

1. Enderleinellus nitzschi Fahrenholz.

Figs. 1, 2.

1818. *Pediculus sphærocephalus* Nitzsch, *Germar's Mag.,* 3: 305. (Not *Pediculus sphærocephalus* Olfers, 1816.)
1842. *Hæmatopinus sphærocephalus* (Nitzsch), Denny, "Mon. Anopl. Brit.," 36.
1864. *Pediculus sphærocephalus* Nitzsch, *Zeit. f. ges. Naturw.,* 23: 27.
1874. *Hæmatopinus sphærocephalus* (Nitzsch), Giebel, "Insecta Epizoa," 35–6; pl. 1, f. 4.
1880. *Hæmatopinus sphærocephalus* (Nitzsch), Piaget, "Les Pediculines," 640–41.
1904. *Polyplax* (?) *sphærocephala* (Nitzsch), Enderlein, *Zool. Anz.,* 28: 143.

1908. *Polyplax* (?) *sphærocephala* (Nitzsch), Dalla Torre, Anoplura, 14, Gen. Ins.
1910. *Polyplax* (?) *sphærocephala* (Nitzsch), Mjöberg, *Arkiv för Zoologi*, 6: 13, 159–160.
1912. *Enderleinellus sphærocephalus* (Nitzsch), Fahrenholz, *Zool. Anz.*, 39: 56.
1912. *Enderleinellus spærocephalus* (Nitzsch), Fahrenholz, 2., 3., u. 4, *Jahresb. des Nieder säch. zool. Ver. zu Hannover*, 52–3; tf. 22–3; pl. 2, f. 5–7.
1916. *Enderleinellus sphærocephalus* (Nitzsch), Ferris, *Psyche*, 23: 107.
1916. *Enderleinellus nitzschi* Fahrenholz, *Archiv. f. Naturges.*, Abt. A, 81: 29.

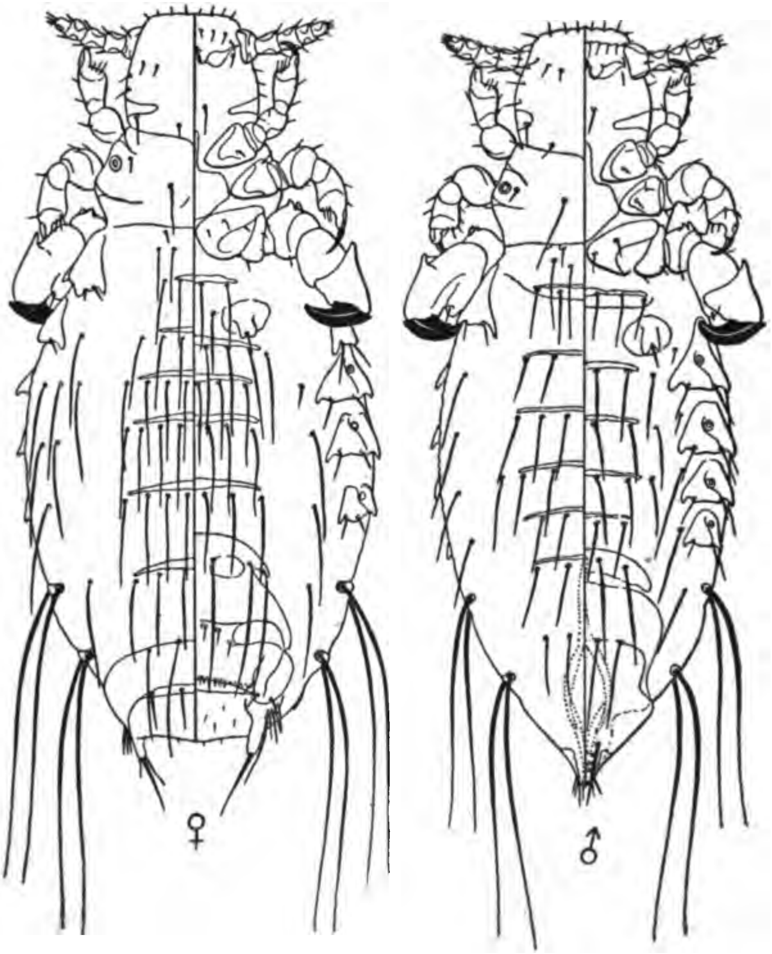


Fig. 1.—*Enderleinellus nitzschi* Fahrenholz.

HOST OF THE TYPE. *Sciurus vulgaris*, Europe.

MATERIAL EXAMINED. From *Sciurus vulgaris fuscoater*, Switzerland; *S. syriacus*, North Syria; *S. hudsonicus petulans*, Glacier Bay, Alaska; *S. hudsonicus vancouverensis,* Kuiu Ids., Alaska; *S. douglasi mollipillosus* and *S. douglasi albolimbatus,* California; *S. fremonti,* Colorado.

FEMALE (Fig. 1). *Length* 0.9 mm. *Head* but little longer than broad, the anterior margin broadly truncate, the lateral margins nearly parallel; antennæ set very close to the anterior margin; rostrum on the ventral side between the bases of the antennæ. *Thorax* somewhat shorter than the head; sternal plate (Fig. 2*B*) rather spatulate in form, having a narrow, handle-like portion which extends forward between the anterior coxæ; posterior femora with a pair of tooth-like processes on the anterior margin, posterior tibiæ with a similar process at the outer anterior angle.

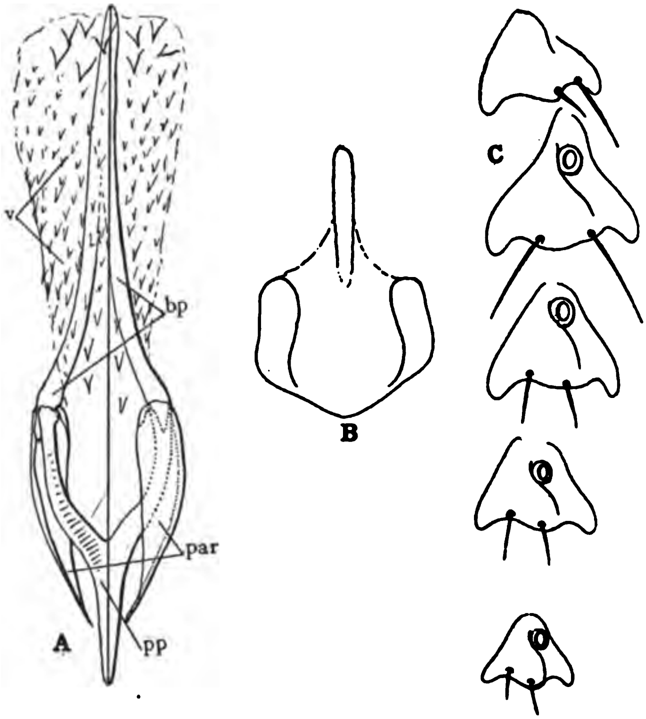


Fig. 2.—*Enderleinellus nitzschi* Fahrenholz; *A,* genitalia of male; *B,* sternal plate; *C,* pleural plates.

Abdomen elongate-oval, the apex truncate and produced into a lobe-like process at the angles. Pleurites (Fig. 2*C*) present on the second to sixth segments, all more or less triangular in shape, the posterior angles produced and with a pair of rather short spines on the posterior margin. Spiracles small, present on the last four pleurites. Ninth tergite for the most part occupied by a transverse sclerite which extends entirely across the segment; second to seventh tergites each with a narrow sclerite which occupies the median third or fourth. Spines all quite slender, arranged in median and sub-marginal series. In the median series there are four spines on the first and second segments, six to eight on the third to seventh segments and two on the eighth and ninth segments. In each submarginal series there is one on the third segment, three on the fourth, two on the fifth, and one on the sixth and seventh. Eighth and ninth segments each with a pair of long, slender setæ at each lateral margin. On the ventral side the arrangement is quite similar, except that the greater part of the seventh to ninth segments is occupied by the large genital plate. The lobe-like processes at the end of the abdomen each bear a single large spine and at their bases there is a cluster of smaller spines.

MALE (Fig. 1). *Length* 0.8 mm. In all respects closely resembling the female, except that the end of the abdomen is sharply pointed. Genital plate a broad sclerite occupying most of the seventh sternite and with its posterior lateral angles produced into a slender process which reaches the lateral margins at the posterior lateral angles of the eighth segment.

Genitalia (Fig. 2*A*) of a simple type. Basal plate[2] (*bp*) a slender rod which is expanded and deeply bifid at the posterior end. To the basal plate articulate the flattened parameres (*par*). Between the parameres is the pseudo-penis (*pp*), the arms of which appear likewise to articulate with the basal plate. The penis, the endomeres, and certain other parts usually associated with them appear to be lacking, or, it were probably more correct to say, unchitinized. The vesicula penis (*v*) is plainly evident by reason of the numerous teeth that it bears.

NOTES.—The description given above is based upon the specimens from *Sciurus vulgaris*, but those from the other hosts agree with these in all respects.

This species is a rather extreme member of the genus, the very short head, the presence of five pairs of pleural plates and the character of the genitalia of the male distinguishing it sharply from the nearest related form which is possibly to be found in *E. kelloggi* Ferris.

---

[2] The terminology of the parts of the male genitalia used herein is that used by Cummings (*Proc. Zool. Soc. London*, p. 257, 1916), except that the term "vesicula penis" is used in lieu of "preputial sac," the former term being that employed by Nuttall (Parasitology, 9: 301, 1916). The latter author has made a very careful study of the genitalia of *Pediculus humanus* Linnæus and has proposed a set of descriptive terms for the parts of the male genitalia of this species. Unfortunately the study was confined to this species alone and aids but little in homologizing the structures found in other species. In the absence of any careful comparative studies of numerous forms it becomes a difficult matter to interpret and homologize these structures. It should therefore be understood that in this paper the application of the various terms is purely tentative and is extremely subject to error.

2. Enderleinellus malaysianus n. sp.

FIGS. 3, 4.

HOST OF THE TYPE. *Sciurus lucas,* St. Lukes Id., Mergui Archipelago, Malaysia. Holotype, a male.

SPECIMENS EXAMINED. From the type host; from *S. bentincanus,* Bentinck Id., Mergui Archipelago; *S. borneoensis,* Pulo Kanchut, Borneo;

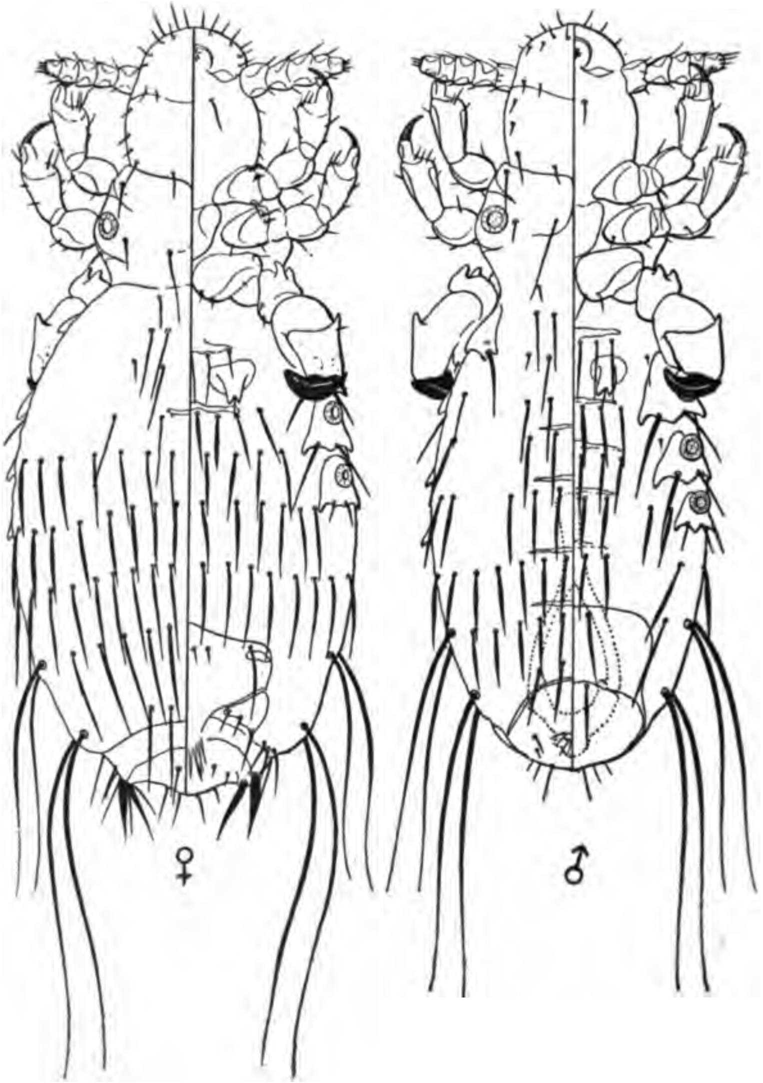


Fig. 3.—*Enderleinellus malaysianus* n. sp.

S. davisoni, Trong, Lower Siam; *S. domelensis,* Domel Id., Mergui Archipelago; *S. lancavensis,* Pulo Teratau.

Male (Fig. 3). *Length* 0.6 mm. *Head* somewhat longer than wide, the anterior margin broadly rounded, the lateral margins nearly parallel; antennæ well back from the anterior margin; rostrum on the ventral side, slightly anterior to the bases of the antennæ. *Thorax* about as long as the head; sternal plate (Fig. 4*B*) cordate, the lateral portions more heavily chitinized than the remainder.

Abdomen elongate-oval, the apex rounded. Pleurites (Fig. 4*C*) present on the second to fifth segments. Spiracles present on the last three pairs of pleurites, apparently lacking on the remaining segments, extraordinarily large and conspicuous. Fourth to seventh tergites each with a very narrow sclerite occupying the median fourth of the segment; ninth with a narrow sclerite extending across its entire width. Spines of the dorsum, moderately stout, arranged as follows: First to fourth segments each with a median group of four, fifth segment with median group of six, sixth and seventh with unbroken transverse row of ten to fourteen, third to fifth with one or two submarginal spines, seventh

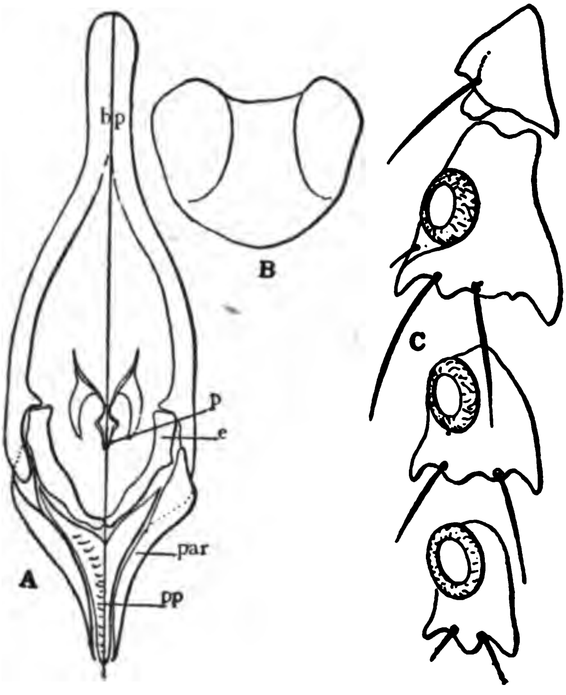


Fig. 4.—*Enderleinellus malaysianus* n. sp.: *A,* genitalia of male; *B,* sternal plate; *C,* pleural plates.

and eighth each with a pair of long setæ at each lateral margin. On the ventral side the arrangement is very nearly the same except that the sixth and seventh segments bear each a median group of two or four spines and a single submarginal spine instead of an unbroken transverse row. Genital plate occupying the greater part of the seventh sternite, quadrate in form, its posterior angles produced to the lateral margin of the ninth segment.

Genitalia (Fig. 4*A*). Basal plate (*bp*) composed of a single piece, which is cleft for more than half its length, the two arms having their tips widely separated. To the tips of the arms articulate the parameres (*par*), and between the parameres is the rather stout pseudo-penis (*pp*). Anterior to the pseudo-penis is an irregularly U-shaped piece (*e*), each arm of which articulates with a small sub-apical process on the corresponding arm of the basal plate. This piece is possibly the fused endomeres. Between the arms of the basal plate there is also a small, weakly chitinized structure which is probably the penis (*p*).

FEMALE (Fig. 3). *Length* 0.7 mm. Differing from the male chiefly in the larger number of spines on the abdomen and in the absence of the small tergal and sternal sclerites. First to third tergites each with four small spines, fourth to sixth each with a continuous transverse row of fourteen to eighteen larger spines, seventh with ten, eighth with four. On the ventral side the arrangement is much the same except that the eighth sternite, which is for the most part occupied by the genital plate, bears but two spines. Extremity of the abdomen without lobe-like processes but with two or three large, flattened spines at the angles.

NOTES.—While this species appears to be a member of the *nitzschi* group, it approaches in the character of the genitalia of the male most nearly *E. menetensis* n. sp. It is readily recognizable in either sex by the extraordinarily large spiracles and the presence of four pairs of pleural plates. The genitalia of the male are likewise quite distinctive.

3. **Enderleinellus menetensis** n. sp.

FIGS. 5, 6.

HOST OF THE TYPE. *Menetes berdmorei rufescens,* Koh Kut Id., Southeast Siam. Holotype, a male.

SPECIMENS EXAMINED. From the above host and locality only.

MALE (Fig. 5). *Length* 0.5 mm. *Head* slightly longer than wide, the anterior margin broadly rounded, the lateral margins almost parallel. Antennæ set well back from the apex of the head. Rostrum on the ventral side slightly back from the anterior margin of the head. *Thorax* about as long as the head, the sternal plate (Fig. 6*B*) quadrate. Posterior femora each with a pair of tooth-like processes on the anterior margin and the posterior tarsi with a similar process at the outer anterior angle.

Abdomen broadly oval, the tip slightly pointed. Pleurites (Fig. 6*C*) present on the second to fourth segments, each with a pair of small spines on the posterior margin. Spiracles present on the last two pairs of pleural plates and on the fifth and sixth (and perhaps the seventh) segments, also; extremely small. Fourth to ninth tergites each with a very narrow sclerite occupying the median fourth of the segment. Spines all small

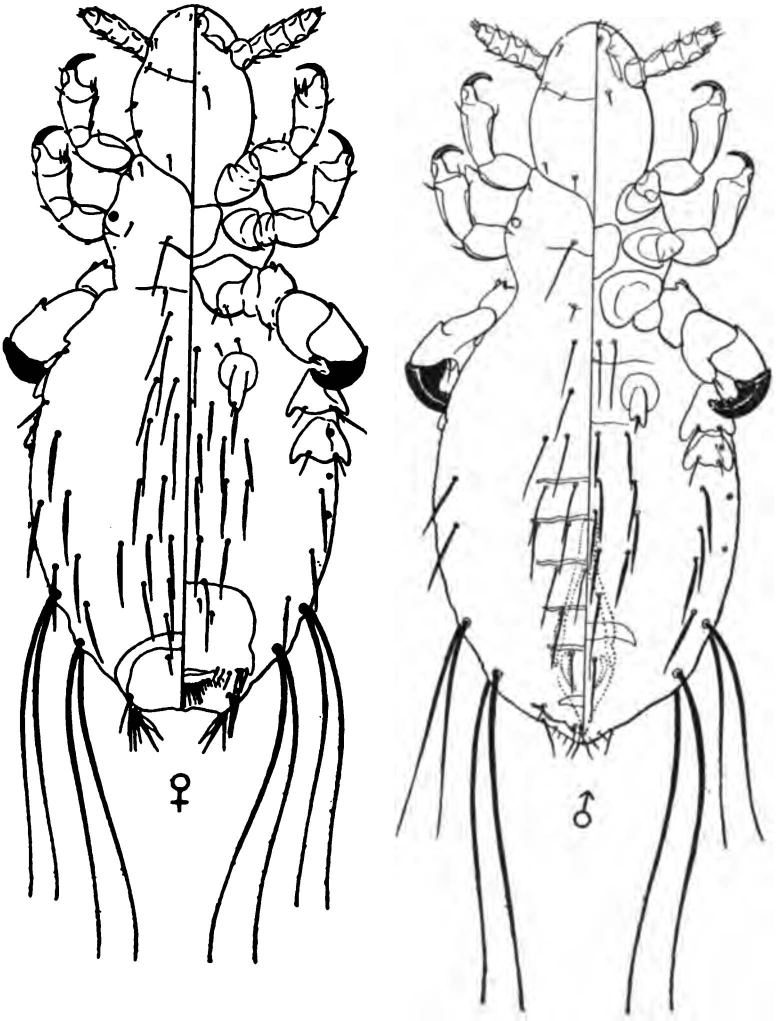


Fig. 5.—***Enderleinellus menetensis*** n. sp.

and slender, few. The first, second, seventh, and eighth tergites each bear a median group of two, the remainder each bear a median group of four. Fourth and fifth segments each with a single submarginal spine. Seventh and eighth each with a pair of long setæ at each lateral margin. On the ventral side the arrangement of the spines is practically the same as on the dorsum, but all are conspicuously stouter. Sternites without chitinization except for the very small genital plate which consists merely of a small, transverse sclerite on the eighth segment.

Genitalia (Fig. 6*A*). Basal plate (*bp*) consisting of a single piece which is divided for more than half its length into two slender arms.

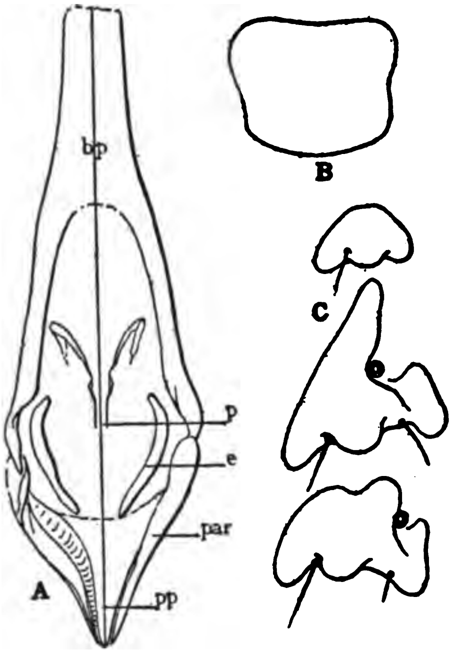


Fig. 6.—*Enderleinellus menetensis* n. sp.: *A*, genitalia of male; *B*, sternal plate; *C*, pleural plates.

The parameres (*par*) are rather slender and nearly straight, their tips converging. Between the parameres lies the stout pseudo-penis (*pp*). Anterior to the pseudo-penis are two small pieces which are perhaps the endomeres (*e*). Between the arms of the basal plate is a small, chitinized structure (*p*) which is perhaps the penis.

FEMALE (Fig. 5). *Length* 0.6 mm. In all essential respects closely resembling the male, but with the posterior end of the abdomen truncate, and with the tergites and sternites not chitinized, except for the genital plate and a narrow sclerite which extends across the tergum of the ninth segment. Apex of the abdomen with the angles slightly produced and bearing two or three flattened spines.

NOTES.—In the character of the genitalia this species is quite close to the preceding, but the presence of but three pairs of pleural plates, the very small spiracles and the paucity of spines will suffice to separate the two in both sexes. It is also probably quite close to the next species, *E. larisci* n. sp., from which it differs by the few spines in both sexes and in the genitalia of the male.

4. **Enderleinellus larisci** n. sp.

FIGS. 7, 8.

HOST OF THE TYPE. *Lariscus diversus*, Lanchut, southwest Borneo. Holotype, a male.

SPECIMENS EXAMINED. From the above host and locality only.

MALE (Fig. 7). *Length* 0.5 mm. *Head* slightly longer than wide, the anterior margin broadly rounded, the lateral margins nearly parallel. Antennæ set well toward the apex of the head. Rostrum on the ventral side, slightly back from the margin.

Thorax somewhat shorter than the head, the sternal plate consisting of two detached, oval pieces. Posterior femora with three tooth-like processes on the anterior margin and the posterior tarsi with a similar process at the outer anterior angle.

Abdomen broadly oval, sharply rounded at the tip. Pleural plates present on the second to fourth segments. Spiracles present on second to fifth segments, quite small. Tergites entirely unchitinized. Spines numerous, for the most part quite large and stout, arranged in median and sub-marginal series. In the median series there are two slender spines on the second and third segments, four on the fourth, six stout spines on the fifth, sixth and seventh and two on the eighth. The spines of the sub-marginal series are stouter than the others; there is a single spine on the third and seventh segments and four on the fifth to seventh. Seventh and eighth segments each with a pair of long setæ at each lateral margin. On the ventral side the spines are somewhat stouter. The arrangement is practically the same as on the dorsum except that there is no division into median and sub-marginal series. Sternites unchitinized except for the genital plate which consists of a small transverse sclerite occupying the median half of the seventh segment.

Genitalia (Fig. 8*A*). Basal plate (*bp*) quite stout, divided for about one third of its length into two sharply diverging arms. Parameres (*par*) flat and sharply pointed, their apices curving toward each other. Between the extreme tips of the parameres lies the very small pseudo-penis (*pp*).

Also between the parameres are two elongated pieces (*e*), which are perhaps the endomeres. The penis (*p*) is quite small and usually lies well forward on the basal plate.

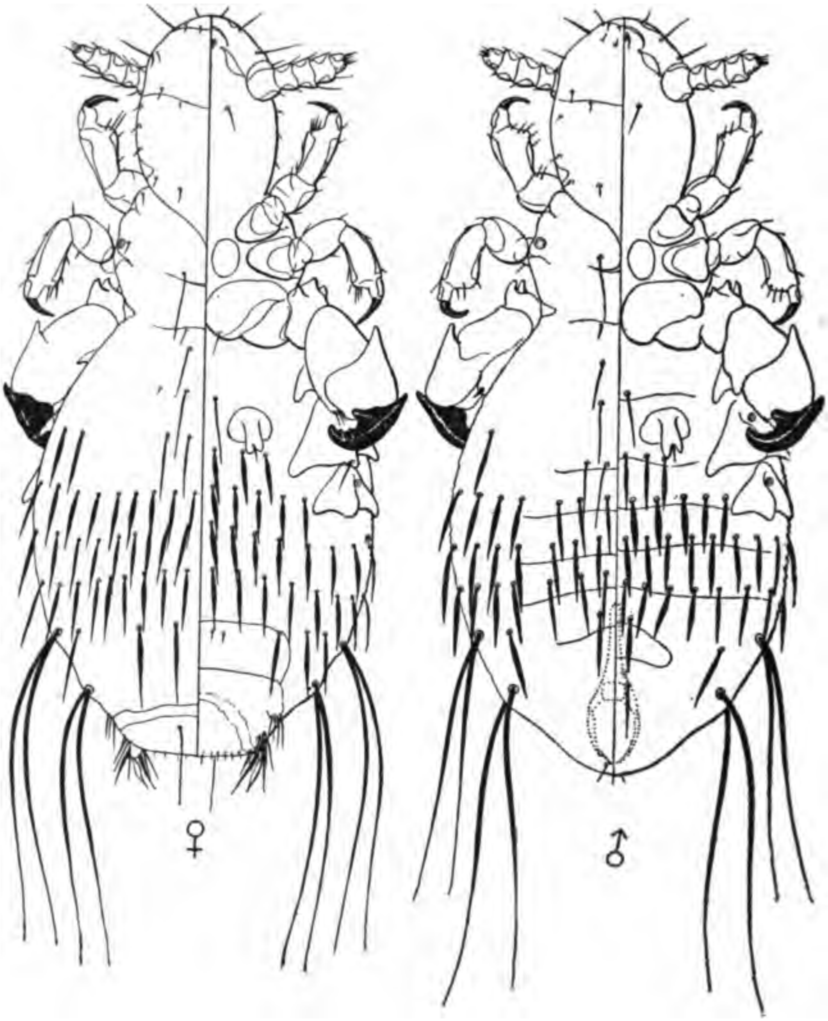


Fig. 7.—*Enderleinellus larisci* n. sp.

Female (Fig. 7). *Length* 0.55 mm. In general very closely resembling the male, but with the abdomen slightly truncate at the tip, with the spines slightly more numerous. Ninth segment with a narrow, transverse sclerite extending across. Genital plate occupying the greater part of the eighth and ninth sternites. Apex of the abdomen with the lateral angles produced into small lobes, each of which bears two or three flattened, spine-like processes.

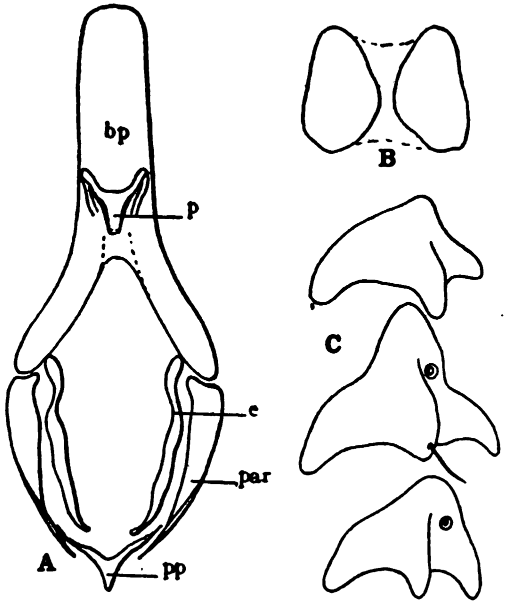


Fig. 8.—*Enderleinellus larisci* n. sp.: *A*, genitalia of male; *B*, sternal plate; *C*, pleural plates.

NOTES.—This species probably is most closely related to the two preceding, *E. menetensis* and *E. malaysianus*, but is readily separable by the numerous stout spines, and the character of the genitalia.

5. **Enderleinellus longiceps** Kellogg and Ferris.

FIGS. 9, 10.

1915. *Enderleinellus longiceps* Kellogg and Ferris, Anoplura and Mall. N. Amer. Mam., 44–6; pl. 2, f. 5; pl. 4, f. 12; pl. 6, f. 2. Stanford University Publ.

1916. *Enderleinellus longiceps* Kellogg and Ferris, Ferris, *Proc. Cal. Acad. Sci.* (4), **6**: 148.

1916. *Enderleinellus longiceps* Kellogg and Ferris, Ferris, *Psyche*, **23**: 105.

HOST OF THE TYPE. "Gray squirrel," Lincoln, Neb. Both *Sciurus niger rufiventer* and *S. carolinensis* ssp. occur in this locality and both harbor this species. The typical host may be taken as the former.

MATERIAL EXAMINED. The types and in addition the following: from *Sciurus niger rufiventer*, Waterloo, Ind., and Valentine, Neb.; *S. carolinensis*, Bayou St. Louis, Mississippi; *S. kaibabensis*, Kaibab National Forest, Arizona; *S. aberti ferreus*, Estes Park, Colorado; *S. apache*, Colonia Garcia, Chihuahua, Mexico; *S. oculatus,* State of Vera Cruz, Mexico; *S. nayaritensis,* Sierra Madre, Zacatecas, Mexico.

MALE (Fig. 9). *Length* 0.65 mm. *Head* considerably longer than wide, the anterior margin broadly rounded, the lateral margins almost straight and practically parallel. Rostrum on the ventral side of the head, well back from the anterior margin. Antennæ set well toward the apex of the head.

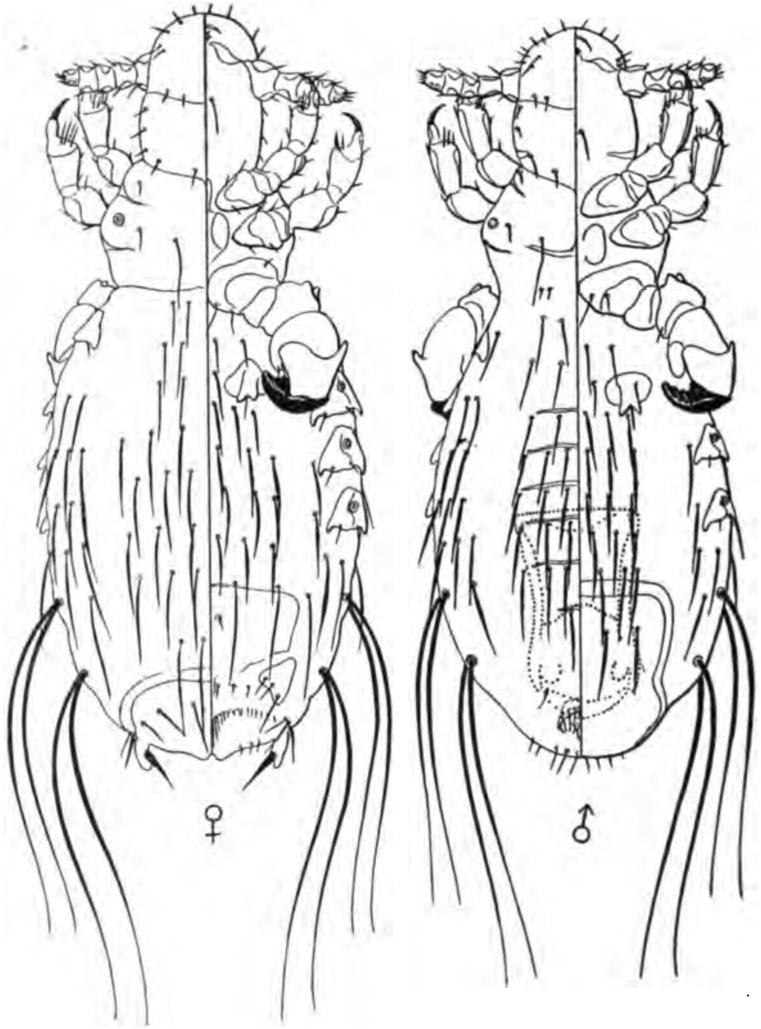


Fig. 9—*Enderleinellus longiceps* K. and F.

Thorax about as long as the head, the sternal plate (Fig. 10*B*) spatulate in form, having a handle-like portion which extends forward between the anterior coxæ, the lateral portions of the plate more heavily chitinized than the remainder. Posterior femora with a pair of tooth-like processes on the anterior margin and a similar process at the outer anterior angle of the posterior tibiæ.

Abdomen elongate-oval, the apex rounded. Pleurites (Fig. 10) present on the second to fifth segments, all with the posterior angles somewhat produced and with a pair of small spines on the posterior margin. Spiracles present only in connection with the last three pairs of pleural plates, quite large and conspicuous. Tergites unchitinized except for a very narrow sclerite occupying the median third of each of the third to seventh segments. Spines quite numerous, varying from quite slender to moderately stout, arranged in median and submarginal series as follows: First, second, and third tergites with median group of four, fourth to seventh with median group of six. Second and seventh with a single submarginal spine, third and fourth with two, fifth and sixth with three. Seventh and eighth segments each with a pair of long, slender setæ at each lateral margin. On the ventral side the arrangement of the spines is practically as on the dorsum, but the spines are somewhat stouter. Sternites unchitinized except for the genital plate, which consists of a narrow

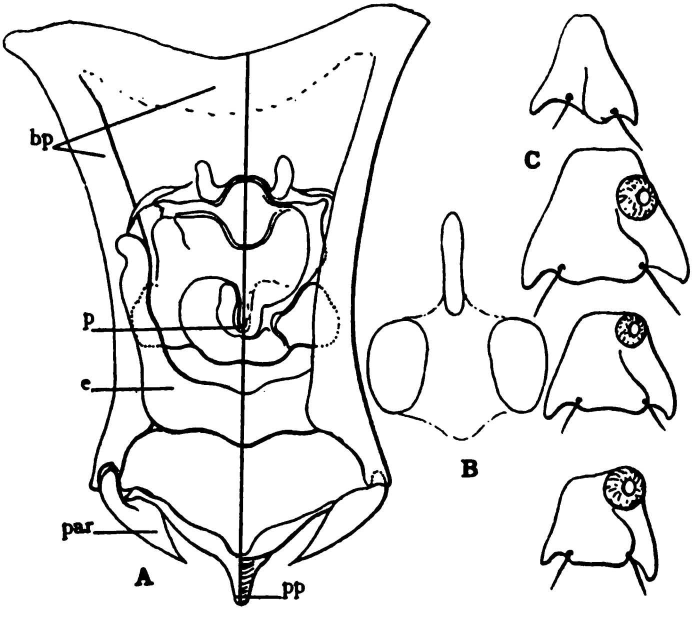


Fig. 10.—*Enderleinellus longiceps* K. and F.: *A*, genitalia of male; *B*, sternal plate; *C*, pleural plates.

sclerite occupying the median two-thirds of the seventh sternite and curved back to meet the lateral margin of the ninth segment.

Genitalia (Fig. 10*A*) extremely conspicuous, large, heavily chitinized and of a complex type. The basal plate (*bp*) consists of a pair of nearly parallel, widely separated rods, the anterior ends of which are connected by a less heavily chitinized cross piece. The tips of these rods are somewhat attenuated and to them attach the very small, flattened parameres (*par*) which point almost toward each other. Between the parameres is the pseudo-penis (*pp*), the arms of which are at an obtuse angle to each other. Between the arms of the basal plate lies a large and extraordinarily complex structure which is composed of the penis (*p*) and probably several other parts so fused as to have lost their identity. On the dorsal side of the basal plate and lying partially posterior to the penis is a U-shaped piece (*e*) which is possibly composed of the fused endomeres.

.FEMALE (Fig. 9). *Length* 0.7 mm. In general closely resembling the male, but with none of the tergites chitinized except for a narrow sclerite extending across the ninth segment. Tip of the abdomen rounded or somewhat truncate, with the angles produced into small lobes, each of which bears a large, stout spine. Genital plate occupying the greater part of the eighth sternite.

NOTES.—This species may be taken as the type of a group of species from American species of *Sciurus*, this group including *E. kelloggi* Ferris and two other species that I am here describing as new. The group is distinguished by the peculiar character of the genitalia of the males, which, in their general characteristics, are similar in all the included species but differ in certain details. The females of this group are scarcely separable.

6. **Enderleinellus kelloggi** Ferris.

Fig. 11.

1916. *Enderleinellus kelloggi* Ferris, Cat. and Host List Anopl., *Proc. Cal. Acad. Sci.* (4), 6: 148. (Without description.)

1916. *Enderleinellus kelloggi* Ferris, Ferris, *Psyche*, 23: 105.

HOST OF THE TYPE. *Sciurus griseus nigripes*, Stanford University, California.

MATERIAL EXAMINED. The types and material from the following hosts: *Sciurus griseus griseus*, Pleasant Valley, Mariposa Co., Cal.; *S. goldmani*, Huehuetan, Chiapas, Mexico; *S. boothiæ*, San Pedro Sula, Honduras; *S. melania*, Boqueron, Colombia. Specimens from *Microsciurus mimilus*, Colombia, are tentatively referred to this species.

MALE. Differing from the male of *E. longiceps* only in the character of the genitalia.

Genitalia (Fig. 11*A*) in general resembling the genitalia of *E. longi-*

ceps but with the rods of the basal plate more slender and much closer together, the parameres (*par*) larger and not pointing toward each other, the pseudo-penis relatively larger and with its arms meeting at a much more acute angle, the U-shaped endomeral piece (*e*) longer, the structures surrounding and including the penis (*p*) very much smaller, and anterior to the penis a weakly chitinized structure (*sp*) which is perhaps the statumen penis of Nuttall.

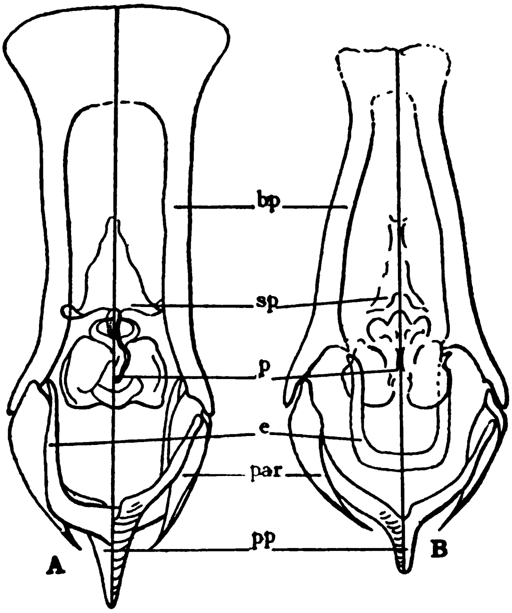


Fig. 11.—*Enderleinellus kelloggi* Ferris: *A*, genitalia of male, from paratype specimen; *B*, genitalia of male, from specimen from *Sciurus boothiae.*

FEMALE. Not recognizably different from the female of *E. longiceps.*

NOTES.—The specimens from *Sciurus boothiæ* differ from typical *E. kelloggi* somewhat in the character of the genitalia (Fig. 11*B*). The arms of the basal plate (*bp*) diverge somewhat instead of being nearly parallel, the penis and its surrounding structures are more weakly developed and the U-shaped endomeral piece (*e*) is smaller and very weakly chitinized. However, the specimens from *S. goldmani* stand directly between these two forms, as do those from *S. melania.* It is possible that further collecting may indicate the desirability of a separation.

The specimens from *Microsciurus mimilus* are referred to *E. kelloggi* only provisionally. The genitalia are of the type seen in the specimens from *Sciurus boothiæ,* the pleural plates seem to be somewhat larger, the genital plate of the male is larger and the tergal sclerites in the male are likewise noticeably larger. The material at hand, however, is not satisfactory and the specimens may be referred to *kelloggi* for the present.

7. **Enderleinellus extremus** n. sp.

FIG. 12.

HOST OF THE TYPE. *Sciurus socialis*, Nenton, Guatemala.

SPECIMENS EXAMINED. From the type host and the following: *Sciurus aureogaster*, Papantla, Vera Cruz, Mexico; *S. aureogaster hypopyrrhus*, Quichicon, Oaxaca, Mexico; *S. deppei*, Teapa, Tabasco, Mexico; *S. griseoflavus chiapensis*, San Cristobal, Chiapas, Mexico; *S. negligens*, Alta Mira, Tamaulipas, Mexico; *S. nelsoni*, Huitzilac, Morelos, Mexico; *S. poliopus*, Cerro San Felipe, Oaxaca, Mexico. In addition to the above I refer tentatively to this species specimens from the following: *Sciurus æstuans hoffmani*, Santa Clara, Costa Rica; *S. colliæ*, Santiago, Tepic, Mexico; *S. nesæus*, Margarita Id., Venezuela; *S. arizonensis huachucæ*, Huachuca Mts., Arizona.

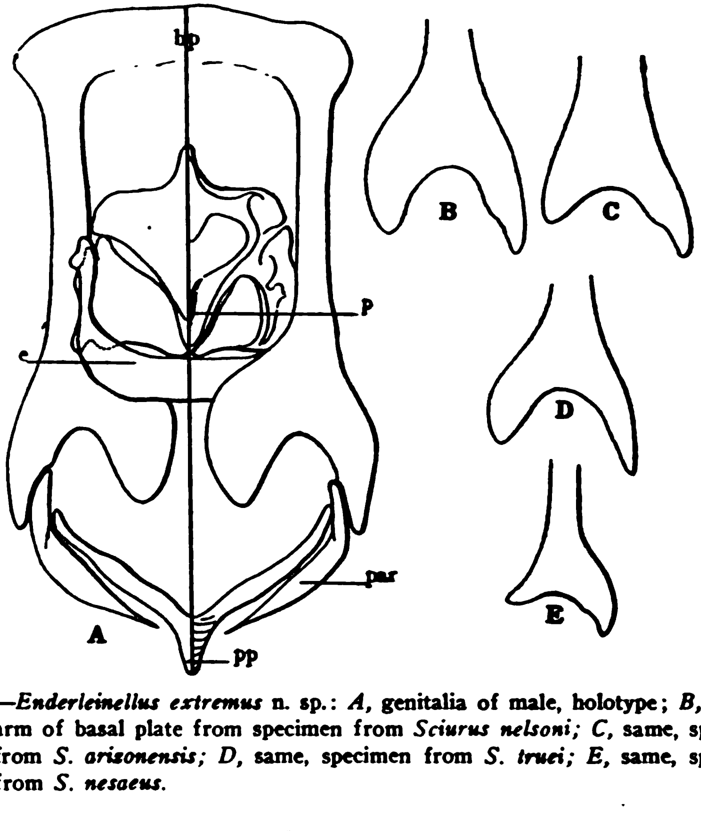


Fig. 12.—*Enderleinellus extremus* n. sp.: *A*, genitalia of male, holotype; *B*, end of arm of basal plate from specimen from *Sciurus nelsoni*; *C*, same, specimen from *S. arizonensis*; *D*, same, specimen from *S. truei*; *E*, same, specimen from *S. nesaeus*.

MALE. Differing from *E. longiceps* in the character of the genitalia, the posterior ends of the arms of the basal plate being much expanded and deeply bi-lobed.

Genitalia (Fig. 12*A*). In general as in *E. longiceps* but with the ends of the arms of the basal plate much expanded and deeply bi-lobed, the mesal lobe broader and more rounded than the outer. To the mesal face of the outer lobes articulate the small parameres (*par*), which are curved toward each other. Between the parameres is the small pseudo-penis (*pp*) with its arms set at an obtuse angle to each other. The penis (*p*) with its complex of surrounding structures is essentially as in *E. longiceps*, but the U-shaped endomeral piece (*e*) is perhaps somewhat shorter and broader.

FEMALE. Not distinguishable from the female of *E. longiceps*.

NOTES.—The type and the specimens which I refer definitely to this species agree quite closely in all respects and it seems that these may justly be separated from *E. longiceps*. The forms from *Sciurus æstuans*, *S. arizonensis*, *S. colliæ*, *S. nesæus* and *S. truei*, however, present a difficult problem, forming, as they do, a series between these two species. In the specimens from *S. nelsoni* the lobes of the arms of the basal plate (Fig. 12*B*) are slightly smaller than in typical *E. extremus*, but scarcely enough so as to arouse any doubt that these specimens should be referred to *extremus*. In the specimens from *S. æstuans*, *S. colliæ*, and *S. truei* these lobes are somewhat smaller (Fig. 12*D*). In those from *S. arizonensis* (Fig. 12*C*) the inner lobe is shorter and blunter, while in those from *S. nesæus* (Fig. 12*E*) it is little more than a spur, approaching the condition found in *E. longiceps*.

For the present I refer these forms in which the inner lobe is at all developed to *E. extremus*. It must be confessed that this procedure is unsatisfying—but it is probably less so than to name a species or a "variety" for each of these gradations. It would indeed be most interesting to examine specimens from all the American squirrels. Were this possible these forms might be disposed of in some better fashion.

8. **Enderleinellus venezuelæ** n. sp.

FIG. 13.

HOST OF THE TYPE. *Sciurus griseogena*, Macuto, Venezuela. Holotype, a male.

SPECIMENS EXAMINED. From the type host and the following: *Sciurus meridensis*, Montes del Escorial, Merida, Venezuela; *S. versicolor zuliæ*, Rio Aurare, Venezuela.

MALE. Of the general type of *E. longiceps*, differing essentially only in the character of the genitalia, these most nearly resembling the genitalia of *E. extremus*.

Genitalia (Fig. 13*A*). Basal plate (*bp*) with the ends of the arms expanded and deeply bi-lobed, the lobes nearly equal. To the mesal face of the outer lobe articulate the short, flat parameres, which are curved toward each other. Between the parameres is the pseudo-penis (*pp*) the tip of which is quite short and the arms set at an obtuse angle to each other. The U-shaped endomeral piece (*e*) is broad and short. The penis (*p*) and its surrounding structures are of a characteristic shape, the whole structure being triangular or of a trefoil shape with the apex directed forward, in contrast to the more or less quadrate form seen in other species.

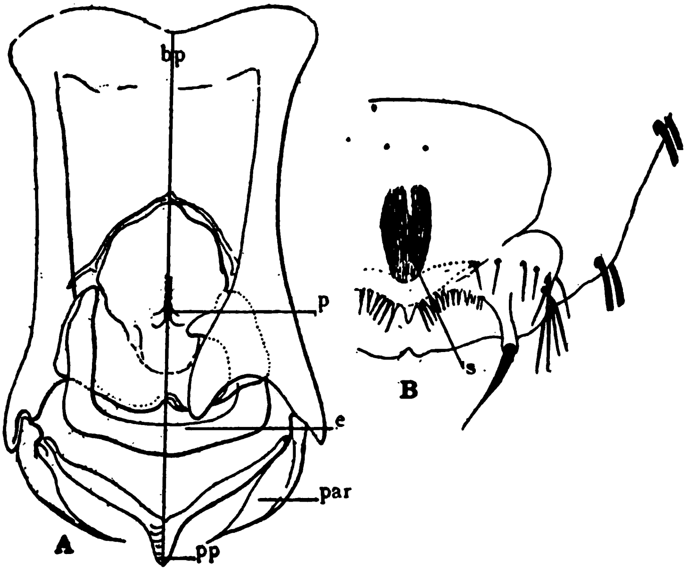


Fig. 13.—*Enderleinellus venezuelae* n. sp : *A*, genitalia of male; *B*, ventral aspect of portion of tip of abdomen of female.

Female. In all respects like the female of *E. longiceps*, except for the unusual size of a structure (Fig. 13*A*, *s*), in all probability the spermatheca, which lies within the body on the median line above the genital plate. In related species this structure, while present, is very small.

Notes.—This species is obviously nearest *E. extremus*, but the differences between the two, while small, appear to be constant and are quite definite.

9. **Enderleinellus platyspicatus** n. sp.

Figs. 14, 15.

Host of the Type. *Funambulus tristriatus*, Colombo, Ceylon. Holotype, a female.

Specimens Examined. From the above host and locality only.

Female (Fig. 14). *Length* 0.5 mm. *Head* short, only slightly broader than long. Anterior margin rounded, lateral margins nearly parallel. Antennæ set well toward the anterior margin. Rostrum on the ventral side at a slight distance from the apex of the head. Ventral side of the head with numerous, small, chitinized areas. *Thorax* about as long as and only slightly wider than the head. Sternal plate (Fig. 15*A*) small, quadrate, the anterior angles slightly produced, the anterior margin emarginate. Posterior femora with three tooth-like processes on the anterior margin and the posterior tarsi with a similar process at the outer anterior angle.

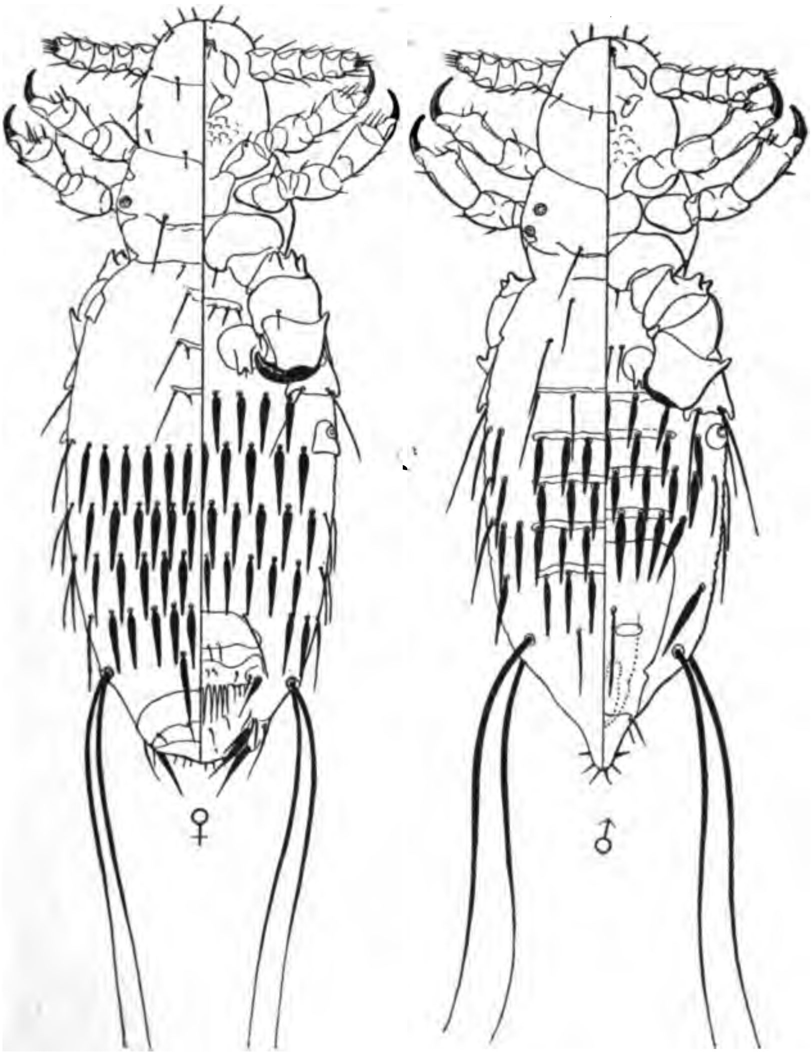


Fig. 14.—*Enderleinellus platyspicatus* n. sp.

Abdomen elongate-oval, rather slender, the apex rounded or slightly truncate. Pleural plates (Fig. 15*B*) present on the second to fourth segments only, the first and third plates quite small, the second much larger and bearing a pair of quite long spines on the posterior margin. Spiracles apparently present only in connection with the last two pairs of pleural plates, moderately large and conspicuous. Tergites unchitinized except for a very small sclerite occupying the median fourth of each of the first three segments and a broad sclerite which extends entirely across the ninth segment. First segment with a median pair of small, slender spines, second and third with a median pair of extremely minute spines, and outside of these a pair of slender spines. Fourth to seventh segments each with a continuous transverse row of twleve to fourteen large, flattened spines which are broadest near the base and taper regularly to the blunt apex. Eighth segment with a median pair of such spines and a pair of very long, slender setæ at each lateral margin. On the ventral side the first segment bears a small transverse sclerite with six small spines, the remainder being unchitinized, except for the genital plate. Third to sixth segments each with an unbroken row of eight to twelve spines similar to those on the dorsum. Seventh segment with a submarginal pair of such spines on each side. Genital plate occupying most of the seventh sternite, divided transversely into two plates. The posterior plate bears a long fringe on its posterior margin and a single flattened spine at each posterior angle. The apex of the abdomen bears a flattened spine at each angle and anterior to this spine are two more of similar character.

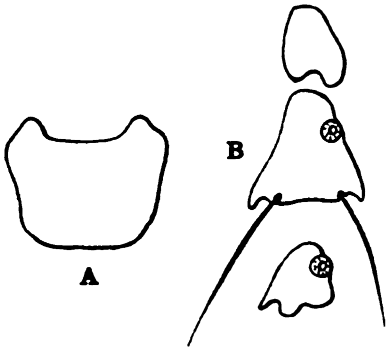


Fig. 15.—*Enderleinellus platyspicatus* n. sp.: *A*, sternal plate; *B*, pleural plates.

Male (Fig. 14). In general resembling the female but with the apex of the abdomen sharply pointed. Third to seventh tergites each with a narrow sclerite occupying the median half of the segment. Spines slightly fewer than in the female, the rows tending to be broken into median and submarginal series. On the ventral side the arrangement of the spines is much as on the dorsum, the third to sixth sternites bearing a small transverse sclerite. Genital plate quite large, extending forward to the anterior margin of the sixth segment.

Genitalia not available for description.

NOTES.—The single specimen found of the male of this species was unfortunately destroyed by accident before a drawing of the genitalia could be made.

The only species at all closely resembling this is *E. dremomydis* n. sp. The curiously flattened spines are quite distinctive.

10. **Enderleinellus dremomydis** n. sp.

FIG. 16.

HOST OF THE TYPE. *Dremomys pernyi*, West Szechuan, China. Holotype, a female.

SPECIMENS EXAMINED. From the above host and locality only.

FEMALE (Fig. 16*A*). *Length* 0.55 mm. *Head* short, only slightly longer than broad, the anterior margin rounded, the lateral margins nearly parallel. Rostrum on the ventral side at a slight distance from the anterior margin. Antennæ set well toward the apex of the head. *Thorax* slightly shorter than the head, the sternal plate (Fig. 16*C*) more or less oval, slightly wider than long, with the anterior margin slightly emarginate; legs of the usual type, the posterior femora with three tooth-like processes on the anterior margin.

Abdomen elongate-oval, the posterior extremity more or less truncate. Pleural plates (Fig. 16*B*) present on the second to sixth segments, each with a pair of small spines on the posterior margin, except the first, which has but a single spine. Spiracles quite small, present on the third to eighth segments. Tergites entirely unchitinized. First to fifth segments each with a median group of four small, slender spines. Fifth with a submarginal pair of short, flatteened, sharply pointed spines. Fifth to seventh each with an unbroken row of ten to fourteen large, stout, sharply pointed spines. Eighth with a median pair of such spines. Seventh with a marginal pair of moderately long, slender setæ; eighth with a marginal pair which are considerably longer than those of the seventh.

On the ventral side the third tergite alone bears a narrow, transverse sclerite. First sternite with a median group of four slender spines. Third and fourth with median group of six short, flattened, sharply pointed spines. Fifth and sixth with twelve such spines which are somewhat longer than those of the preceding segments. Seventh with a single large, submarginal spine on each side. Genital plate occupying the greater part of the seventh sternite. Posterior end of the abdomen with a small lobe-like process at each angle which bears a single stout spine. Anterior to this process is a cluster of several smaller spines.

MALE. Not available for description.

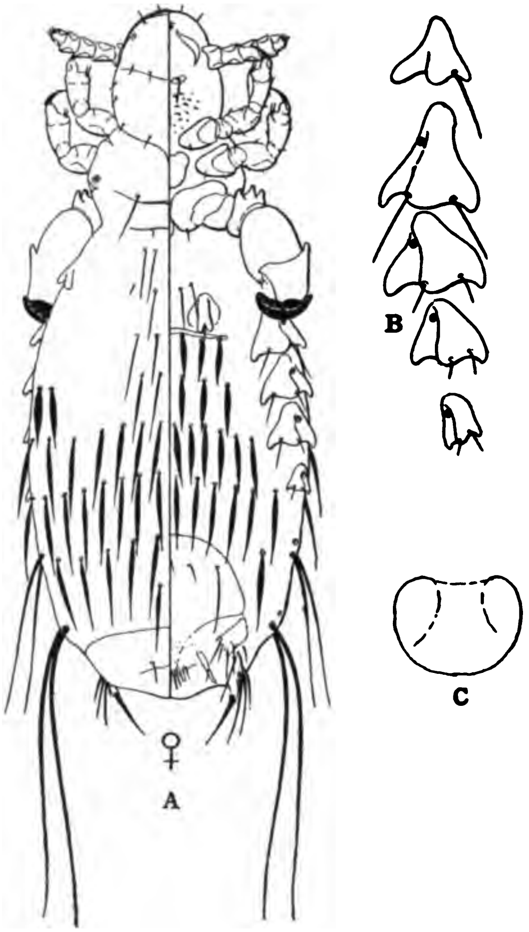


Fig. 16.—*Enderleinellus dremomydis* n. sp.: *A*, female; *B*, pleural plates; *C*, sternal plate.

NOTES.—This species is possibly closest to the preceding, *E. platyspicatus*, but the presence of five pairs of pleural plates is alone sufficient to distinguish it.

11. Enderleinellus nannosciuri n. sp.

FIG. 17.

HOST OF THE TYPE. *Nannosciurus melanotis*, Batavia, Java. Holotype, a female.

Specimens Examined. From the above host and locality only.

Female (Fig. 17*A*). *Length* 0.5 mm. *Head* somewhat elongate, considerably narrower in front of the antennæ than behind, the anterior margin pointed or narrowly rounded. Rostrum close to the apex of the head. *Thorax* slightly shorter than the head. Sternal plate (Fig. 17*B*) quadrate, with the anterior and posterior margins slightly produced medially. Legs of the usual type, the posterior femora with a single tooth-like process on the anterior margin.

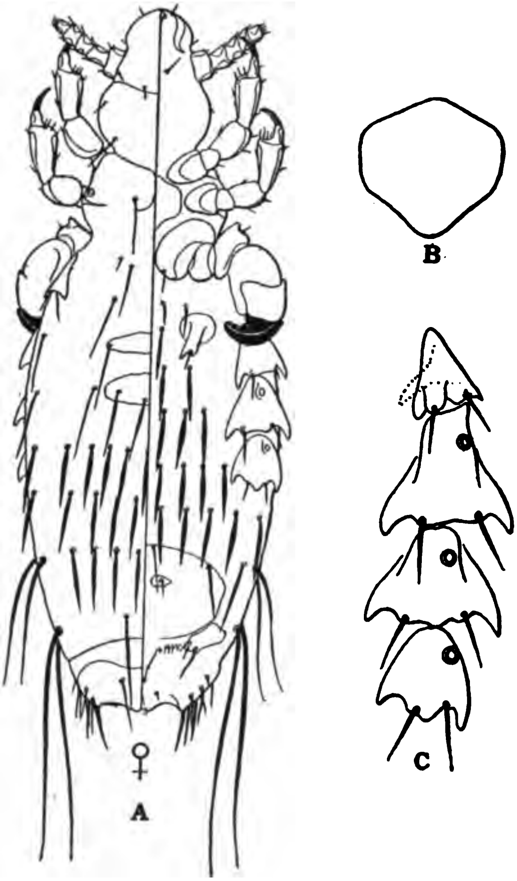


Fig. 17.—***Enderleinellus nannosciuri*** n. sp.: *A*, female; *B*, sternal plate; *C*, pleural plates.

Abdomen elongate-oval, the posterior extremity truncate. Pleural plates (Fig. 17*C*) present on the second to fifth segments, all relatively quite large and with a pair of short spines on the posterior margin. Spiracles quite small, apparently present only in connection with the last three pairs of pleural plates. Tergites unchitinized except for a rather large, oval sclerite which occupies the median third of the third and fourth segments. Spines arranged as follows. First, second, and third segments each with a median group of two slender spines. Fourth with median group of six spines. Fifth, sixth, and seventh each with a transverse row of eight to twelve quite large, stout, and sharply pointed spines, the submarginal spine on the fifth and sixth segments somewhat separated from the others. Second, third, and fourth segments each with a single slender, submarginal spine. Eighth segment with a median pair of spines. Seventh with a pair of slender, moderately long setæ at each lateral margin; eighth with similar but much longer setæ.

On the ventral side the arrangement of the spines is practically as on the dorsum. None of the sternites is chitinized, except for the genital plate which occupies most of the seventh segment. Apex of the abdomen with the angles not produced into a lobe-like process but bearing a cluster of quite stout spines.

MALE. Not available for description.

NOTES.—In the absence of the male it is difficult to indicate the affinities of this species. It is possibly closest to the preceding, *E. dremomydis,* but this is at the best only a surmise.

12. **Enderleinellus zonatus** n. sp.

FIGS. 18, 19.

HOST OF THE TYPE. *Paraxerus jacksoni capitis,* Kijabe, British East Africa. Holotype, a female. Allotype from *Parasciurus animosus,* Mt. Lolokroi, British East Africa.

SPECIMENS EXAMINED. From the following: *Paraxerus jacksoni capitis,* Kijabe, British East Africa; *Paraxerus palliatus suahelicus,* British East Africa; *Paraxerus palliatus ornatus,* Ngoye Hills, Zululand, South Africa; *Parasciurus animosus,* Mt. Lolokroi, British East Africa.

FEMALE (Fig. 18). *Length* 0.6 mm. *Head* quite short, but little longer than broad, with the anterior margin broadly rounded, the lateral margins nearly parallel. Antennæ set well toward the apex of the head. Rostrum on the ventral side of the head, at a slight distance from the anterior margin. *Thorax* about as long as the head; sternal plate (Fig. 19*C*) quadrate, with the anterior angles somewhat produced and the anterior margin emarginate; legs of the usual type, the posterior femora with a pair of tooth-like processes on the anterior margin, the posterior tarsus with a similar process at the outer anterior angle.

Abdomen elongate-oval, the posterior extremity truncate. Pleural plates (Fig. 19*B*) present on the second to fourth segments only, the second pair bearing a pair of moderately long spines on the posterior margin. Spiracles quite small, present only on the last two pleural plates. Second and third tergites each with a weakly chitinized area occupying the median half of the segment. Fourth with a chitinized area occupying nearly the entire width of the segment. Fifth to eighth each with a weakly chitinized area extending entirely across the segment, thus giving the abdomen a banded appearance. Spines very few, small and slender, confined to a median group of two to four on each segment. Eighth segment with a pair of long, slender setæ at each lateral margin.

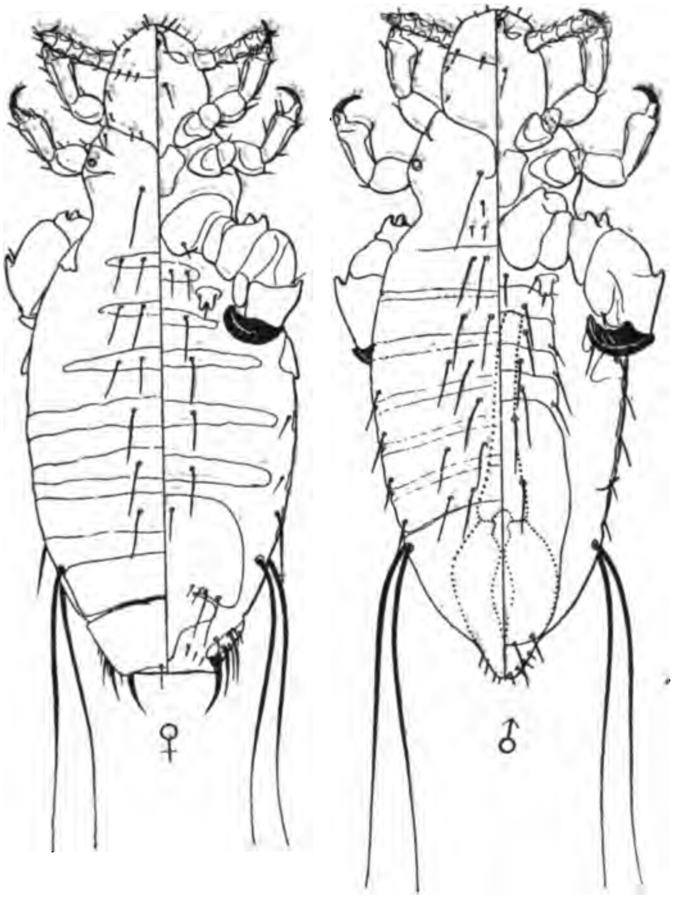


Fig. 18.—*Enderleinellus zonatus* n. sp.

Ventral side similar to the dorsal except that the chitinized areas do not reach to the lateral margin on any segment. Genital plate very large, occupying most of the seventh and eighth segments. The pair of sclerites with their projecting processes on the second sternite are unusually small.

End of the abdomen without lobe-like processes at the angles but with a single large, stout spine and several smaller spines in this region.

MALE (Fig. 18). *Length* 0.5 mm. For the most part resembling the female but with the end of the abdomen sharply pointed. The transverse bands are wider, leaving only small, unchitinized intersegmental spaces. The spines are somewhat more numerous, there being a submarginal spine at each lateral margin of the fourth to seventh segments. On the ventral side the third to sixth sternites each bear a chitinized area which occupies the median half of the segment. These sternites together occupy only the anterior half of the venter, the remainder being taken up by the extraordinarily large genital plate.

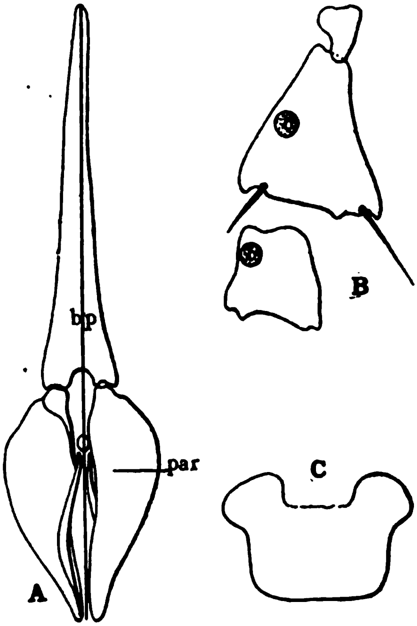


Fig. 19.—*Enderleinellus zonatus* n. sp.: *A*, genitalia of male; *B*, pleural plates; *C*, sternal plate.

Genitalia (Fig. 19*A*) unusually large and conspicuous, the basal plate extending almost to the posterior margin of the thorax. Basal plate (*bp*) a slender rod which is somewhat expanded and slightly bifid at its posterior extremity. To the end of the basal plate articulate the very large, flattened, and tapering parameres (*par*). The amount of material at hand is not sufficient to permit of dissections, and it has not been possible to work out the remaining parts.

NOTES.—A very singular and isolated species, bearing no very close resemblance to any others that I have seen. The banded appearance, the paucity of spines and the extraordinary genitalia of the male are all quite distinctive.

13. Enderleinellus sciurotamiasis n. sp.

FIGS. 20, 21.

HOST OF THE TYPE. *Sciurotamias dravidianus,* Shensi, China. Holotype, a male.

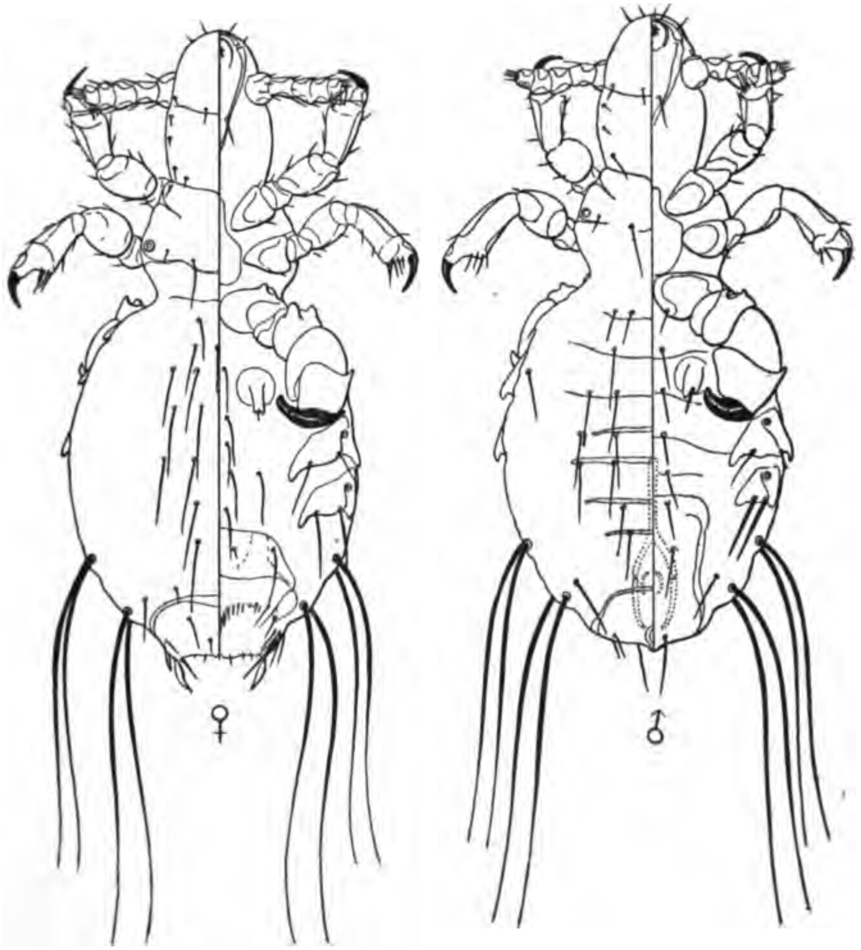


Fig. 20—*Enderleinellus sciurotamiasis* n. sp.

SPECIMENS EXAMINED. From the above host and locality only.

MALE (Fig. 20). *Length* 0.55 mm. *Head* elongate, about twice as wide as long. Anterior margin quite sharply rounded, lateral margins nearly parallel. Antennæ set well back from the apex of the head. Rostrum on the ventral side at a slight distance from the apex of the head. In front of the rostrum is a narrow sclerite which borders the anterior margin of the head, and articulating to the end of this sclerite there is on each side another narrow sclerite which extends posteriorly toward the median line for nearly half the length of the head.

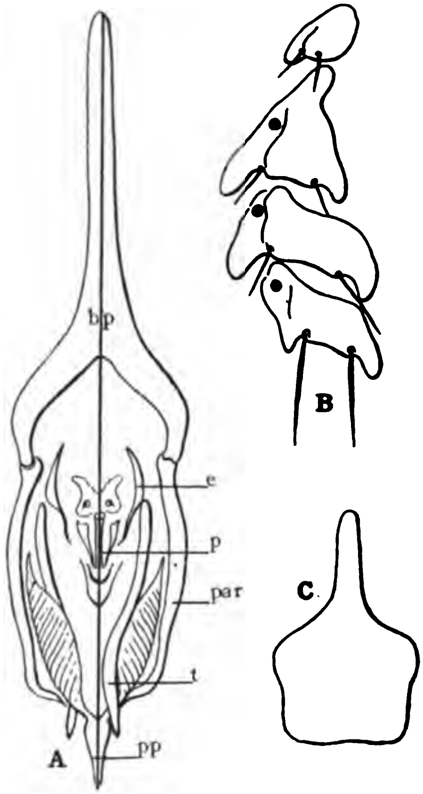


Fig. 21.—*Enderleinellus sciurotamiasis* n. sp.: *A*, genitalia of male; *B*, pleural plates; *C*, sternal plate.

Thorax considerably shorter than the head. Sternal plate (Fig. 21*C*) spatulate, having a handle-like portion which extends forward between the anterior coxæ. Legs of the usual type, the posterior femora with a pair of tooth-like processes on the anterior margin, the posterior tarsi with a similar process at the outer anterior angle.

Abdomen broadly oval. Pleural plates (Fig. 21*B*) present on the second to fifth segments. Each plate with a pair of spines on the posterior margin, those of the last pair larger and stouter than the others. Spiracles quite small, present only in connection with the last three pairs of pleural plates. Dorsum with a narrow sclerite occupying the median third or fourth of the fourth to seventh segments and with a very narrow sclerite extending entirely across the ninth segment. Spines few and small. Third and eighth segments with a single, submarginal spine on each side. Second to seventh segments each with a median group of two to four spines. Seventh and eighth segments each with a pair of long, slender setæ at each lateral margin.

On the ventral side none of the sternites are chitinized, and each segment bears only a median pair of spines. The genital plate consists of a narrow, transverse sclerite occupying the median third of the seventh sternite, with its ends produced back to meet the lateral margin of the ninth segment.

Genitalia (Fig. 21*A*). The basal plate (*bp*) consists of a long, slender piece which is expanded and quite deeply bifid at its posterior end. To the arms attach the slender parameres (*par*) which are more than half as long as the basal plate. Between the tips of the parameres, which are turned toward each other, lies the pseudo-penis (*pp*), the arms of which are set at an acute angle to each other, are flattened, expanded, and transversely striate. Also between the parameres are two slender rods (*t*) which are perhaps the telomeres. What are possibly the endomeres (*e*) are two slender pieces between which lie a complex of structures which appear in part at least to be the penis (*p*).

FEMALE (Fig. 20). *Length* 0.6 mm. In all respects quite closely resembling the male, but with none of the tergites chitinized. Tip of the abdomen truncate, the angles without lobe-like processes but with a cluster of spines of which two or three are flattened and expanded.

NOTES.—An isolated species, apparently not closely related to any other that I have seen.

14. **Enderleinellus euxeri** n. sp.

FIGS. 22, 23.

HOST OF THE TYPE. *Euxerus microdon,* Wambugu and Oni, British East Africa. Holotype, a male, from the first named locality.

SPECIMENS EXAMINED. Only as above recorded.

MALE (Fig. 22). *Length* 0.9 mm. *Head* elongate, the apex sharply pointed, the lateral margins behind the antennæ nearly parallel. Antennæ unusually slender, set about the middle of the head. Rostrum close to the apex. The entire head is quite heavily chitinized, especially on the dorsal side.

Thorax slightly shorter than the head. Sternal plate (Fig. 23*B*) quadrate, the angles rounded. Legs unusually large, especially the posterior pair.

Abdomen almost subcircular, the posterior extremity slightly pointed.

Pleural plates (Fig. 23*C*) present on the second to seventh segments. The first pair is very small; second pair large and bi-lobed, a very long, slender seta arising from the apex of one lobe. Remaining plates one-lobed, being successively smaller, the seventh being very small. Spiracles small, present in connection with the second to seventh pleural plates. The derm is everywhere slightly chitinized and presents a minutely pappilate appearance. Spines few, arranged as follows. Second and third segments each with a single very long, slender seta near each lateral margin. Third to sixth each with a median pair of rather short, stout

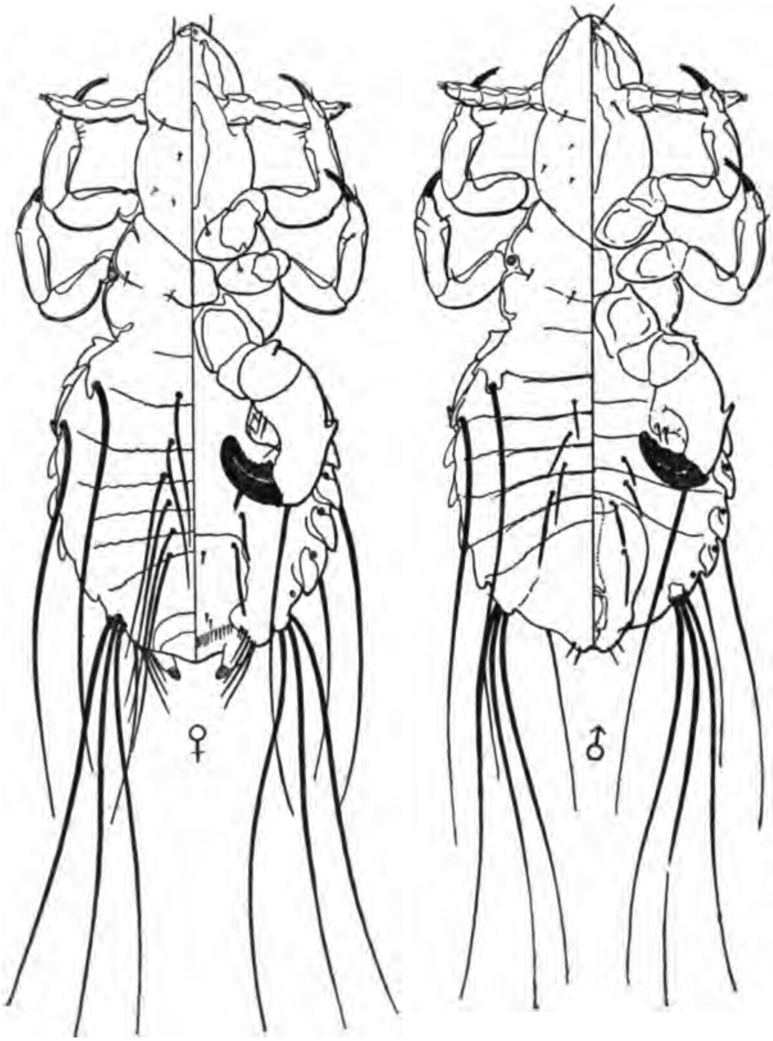


Fig. 22.—*Enderleinellus euxeri* n. sp.

spines. Eighth with two or three very long, slender setæ at each lateral margin. On the ventral side there are only a median pair on the fifth and sixth segments and two median pairs on the genital plate. The pair of sclerites usually present on the second sternite is lacking.

Genitalia (Fig. 23*A*). Relatively small. Basal plate (*bp*) a simple rod, which is expanded and quite deeply bifid at the tip. Parameres (*par*) short and broad. Beyond the ends of the parameres is the short, wedge-shaped pseudo-penis (*pp*), and between the parameres are two proximally fused pieces which are perhaps the endomeres (*e*). Overlying the ends of the parameres and the pseudo-penis is a U-shaped piece (*t*) of doubtful homology, but possibly representing the telomeres.

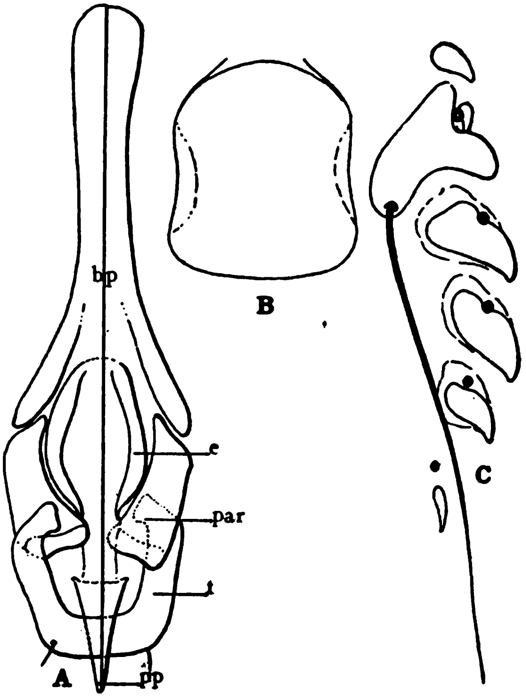


Fig. 23.—***Enderleinellus euxeri*** n. sp.: *A*, genitalia of male; *B*, sternal plate; *C*, pleural plates.

FEMALE (Fig. 22). *Length* 1 mm. In general closely resembling the male, but having the median spines of the dorsum long and slender. End of the abdomen rounded, bearing a pair of lobe-like processes, each of which terminates in a short, flattened, blunt spine.

NOTES.—A most anomalous species, differing from all the other members of the genus in the absence of the paired plates on the second sternite as well as in several other important characters. I am unable to suggest its relationships unless they be with the following species, *E. heliosciuri* n. sp.

15. Enderleinellus heliosciuri n. sp.

FIGS. 24, 25.

HOST OF THE TYPE. *Heliosciurus undulatus daucinus,* Mazeras, British East Africa. Holotype, a male.

SPECIMENS EXAMINED. From the type host and the following: *Heliosciurus rufobrachiatus nyansæ,* Lukosa River, British East Africa; *H. multicolor madigæ,* Uma, Uganda, Africa; *H. ruwenzorii,* Mubuku Valley, Mt. Ruwenzori, British East Africa; *Protoxerus stangeri bea,* Lukosa River, British East Africa.

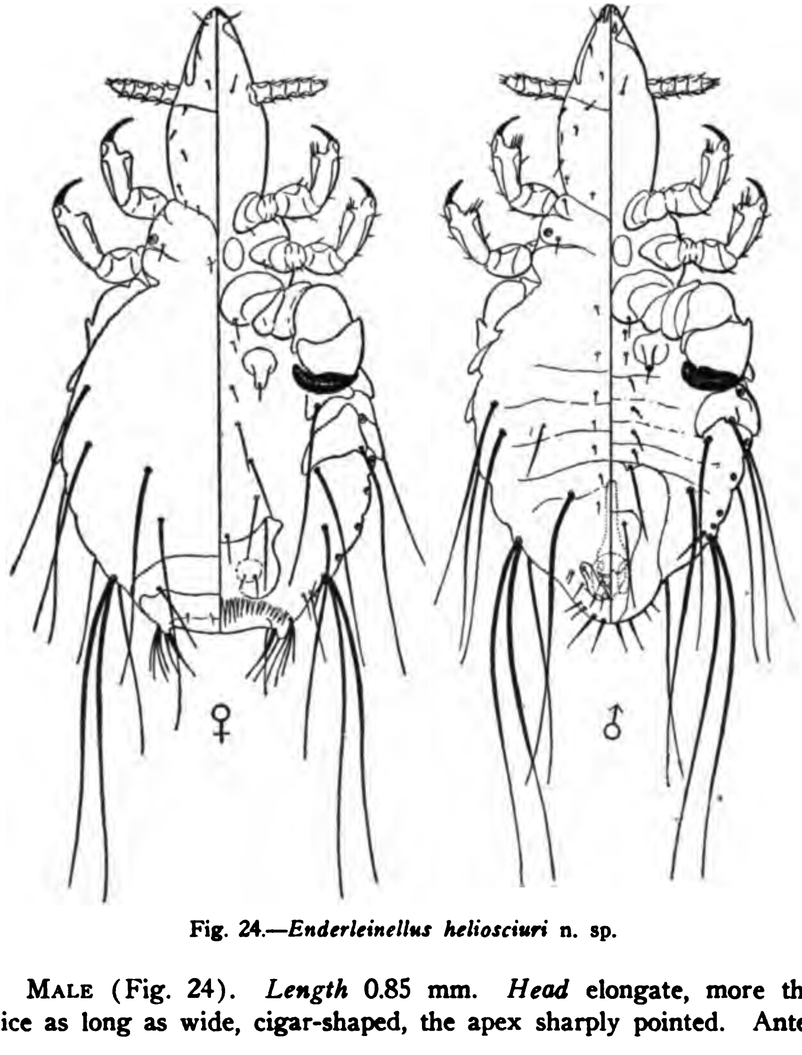


Fig. 24.—*Enderleinellus heliosciuri* n. sp.

MALE (Fig. 24). *Length* 0.85 mm. *Head* elongate, more than twice as long as wide, cigar-shaped, the apex sharply pointed. Antennæ relatively small, set slightly in advance of the middle of the head. Rostrum at the apex of the head. *Thorax* less than half as long as the head. Sternal plate (Fig. 25*B*) divided into two small oval sclerites. Legs of the usual type, but the posterior femora without tooth-like projections on the anterior margin.

Abdomen broadly oval, its posterior extremity somewhat pointed. Pleural plates (Fig. 25*A*) present on the second to fourth segments, short and broad, the last two with a single long, slender seta on the posterior margin. Spiracles quite small, present on the second to eighth segments. Dorsum entirely without chitinized areas. Spines very few, arranged as follows: fourth (?) and fifth (?) segments each with a single, long, slender submarginal seta, fifth with a single rather large spine about half way between the margin and the median line. Seventh with a long, slender seta in the same position. Eighth with a pair of very long, slender setæ at each lateral margin.

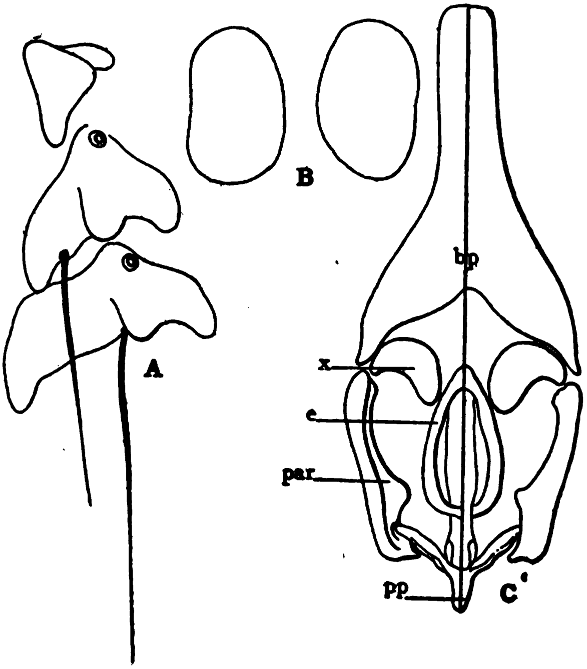


Fig. 25.—*Enderleinellus heliosciuri* n. sp.: *A*, pleural plates; *B*, sternal plate; *C*, genitalia of male.

On the ventral side each segment bears a median pair of short spines. The fifth and seventh segments each bear a long, slender seta near each lateral margin.

Genitalia (Fig. 25*C*). Basal plate (*bp*) a rather short, broad piece which is much expanded and shallowly bifid at the posterior end. Parameres (*par*) about half as long as the basal plate, nearly straight. Between the tips of the parameres is the small pseudopenis (*pp*), the arms of which meet a small, subapical depression in the parameres. Between the proximal ends of the parameres are two small, curved pieces (*x*) of doubtful homology. Likewise between the parameres is an oval, ring-shaped piece (*e*), which is perhaps formed by the fusion of the endomeres. Extending from the anterior end of the endomeral piece to the pseudo-penis is a narrow, indistinct sclerite of doubtful homology.

FEMALE (Fig. 24). *Length* 1 mm. In general quite closely resembling the male, but with a transverse sclerite extending across the ninth segment with the end of the abdomen truncate and with a slightly different arrangement of the setæ on the dorsum. There is a tendency for the spine on the second pleural plate to become a long, slender seta, although it is sometimes quite short. End of the abdomen with a small, lobe-like process at each angle, this bearing a single stout spine.

NOTES.—In the specimens from *Protoxerus* the spines of the median groups, both dorsally and ventrally are larger than in the type but there is obviously some variation and this difference is probably not significant.

This is an isolated species, possibly closest to *E. euxeri*, but yet quite different.

16. Enderleinellus suturalis (Osborn)

FIGS. 26, 27, 28.

1891. *Hæmatopinus suturalis* Osborn, *U. S. Dept. Agric., Div. Ent., Bul.* 7 o. s.: 27, f. 15.
1896. *Hæmatopinus suturalis* Osborn, Osborn, *U. S. Dept. Agric., Div. Ent., Bul.* 5, n. s.: 185, f. 109.
1904. *Polyplax* (?) *suturalis* (Osb.), Enderlein, *Zool. Anz.*, 28: 143.
1908. *Polyplax* (?) *suturalis* (Osb.), Dalla Torre, Anoplura, 14, Gen. Ins.
1915. *Enderleinellus suturalis* (Osb.), Kellogg and Ferris, Anoplura and Mall. N. Am. Mammals, 40–42; pl. 4, f. 9. Stanford Univ. Publ.
1915. *Enderleinellus suturalis* var. *occidentalis* Kellogg and Ferris, *ibid.*, 42; pl. 2, f. 3; pl. 4, f. 10; pl. 5, f. 17.
1916. *Enderleinellus suturalis* (Osb.), Ferris, Cat. Anoplura, *Proc. Cal. Acad. Sci.* (4), 6: 149.
1916. *Enderleinellus suturalis* var. *occidentalis* K. and F., Ferris, *ibid.*, 150.
1916. *Enderleinellus suturalis* (Osb.), Ferris, *Psyche*, 23: 108.

HOST OF THE TYPE. In the original description this species was recorded from *Citellus* (=*Spermophilus*) *franklini* and *C. 13-lineatus*, at Ames, Iowa. The former may be considered as the type host, and it is upon specimens from this host that the present figures and description are based.

SPECIMENS EXAMINED. From *Citellus beldingi,* Tuolumne Meadows, California; *C. elegans,* Sulphur Springs, Colorado; *C. eversmanni,* Altai, Siberia; *C. franklini,* Walhalla, North Dakota; *C. mollis,* Virginia Valley, Nevada; *C. mongolicus,* Kansu, China; *C. osgoodi,* near Circle, Alaska; *C. townsendi,* Wallula, Wash.; *Citellus tridecimlineatus pallidus,* Pendennis, Kan., and *C. tridecimlineatus texensis,* Mt. Scott, Oklahoma; *Callospermophilus chrysodeirus,* California; *C. castanurus,* Park City, Utah; *C. madrensis,* Sierra Madre, Chihuahua, Mexico; *Ammospermophilus nelsoni,* Bakersfield, Cal.; *Cynomys gunnisoni,* Florissant, Colo.; *C. leucurus,* Routt County, Colorado, and near Independent Rock, Wyo.

FEMALE (Fig. 26). *Length* 0.8 mm. *Head* elongate, at least twice as

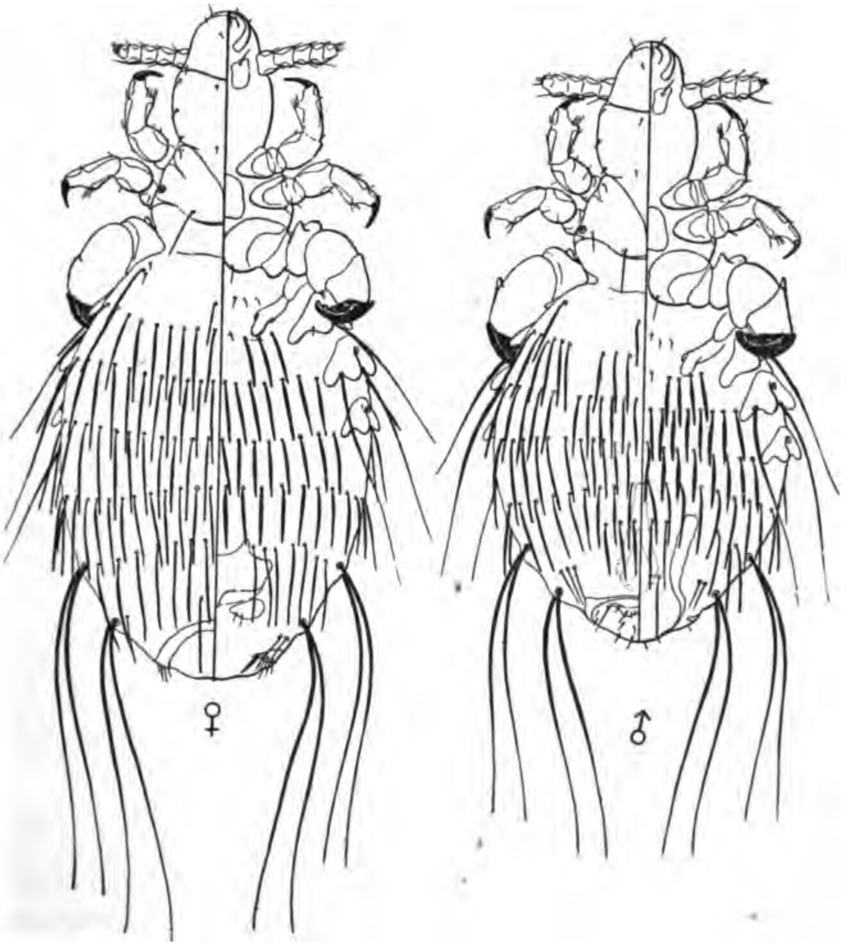


Fig. 26.—*Enderleinellus suturalis* (Osborn): figure from specimens taken from *Citellus franklini,* Walhalla, North Dakota.

long as wide, the apex rounded or slightly pointed and more or less deflexed. Head widening somewhat behind the antennæ, the margins nearly parallel. The post-antennal suture is unusually well defined. On the ventral side the rostrum, which is situated near the apex, is almost surrounded by a ring-like sclerite. Antennæ set slightly in advance of the middle of the head.

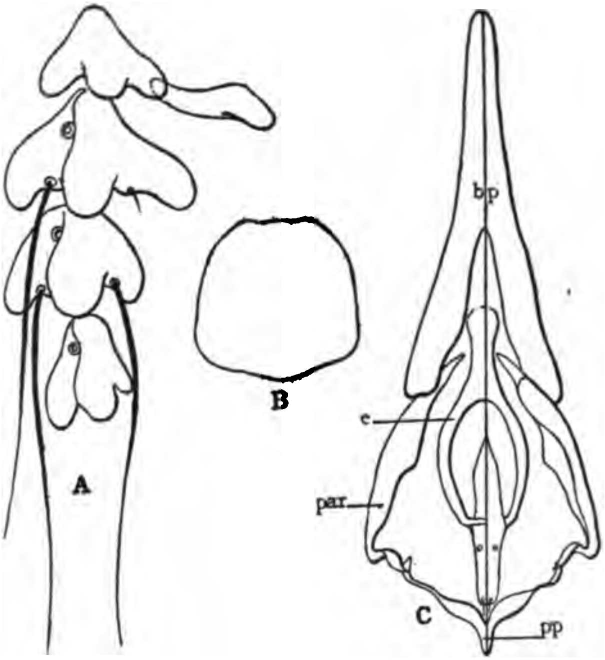


Fig. 27.—*Enderleinellus suturalis* (Osborn): *A*, pleural plates; *B*, sternal plate; *C*, genitalia of male. Figures from specimens taken from *Citellus franklini*, Walhalla, North Dakota.

Thorax somewhat shorter than the head. Sternal plate (Fig. 27*B*) more or less quadrate, the anterior end slightly narrower than the posterior. Legs of the usual type, the posterior femora with a single tooth-like process on the anterior margin, the posterior tarsi without such a process at the outer anterior angle.

Abdomen broadly oval or subcircular, the posterior extremity rounded. Pleural plates (Fig. 27*A*) present on the second to fifth segments, quite large, each with the posterior angles produced and broadly rounded and with a median lobe on the posterior margin. Second pair with a single seta and a very small spine on the posterior margin, third pair with two long, slender spines. Derm membranous throughout except for a narrow transverse sclerite extending across the ninth tergite. Spines extremely numerous, all quite long and stout. On the dorsum the arrangement is as follows: First segment with a single submedian spine and a median pair of small spines. Ninth with a median pair. Remaining segments with an unbroken row of eighteen to twenty-four spines. Seventh and eighth segments each with a pair of long, slender setæ at each lateral margin.

On the ventral side the arrangement of the spines is much as on the dorsum, but all the spines tend to be somewhat shorter and stouter. The paired sclerites on the second sternite are produced laterally, reaching to the first pair of pleural plates, with which they are closely associated, although they are not actually attached. The genital plate is rather small, occupying the median half of the eighth segment. The end of the abdomen bears a pair of short stout spines which are sometimes seen at some distance from the margin.

MALE (Fig. 26). *Length* 0.75 mm. In general very closely resembling the female but with the abdomen slightly more pointed. The genital plate consists merely of a pair of narrow sclerites which extend forward from the margin of the ninth segment to the middle of the seventh sternite.

Genitalia (Fig. 27*C*). Basal plate (*bp*) a simple rod which is expanded and deeply bifid posteriorly. Parameres (*par*) about half as long as the basal plate, diverging posteriorly, with their tips bent toward each

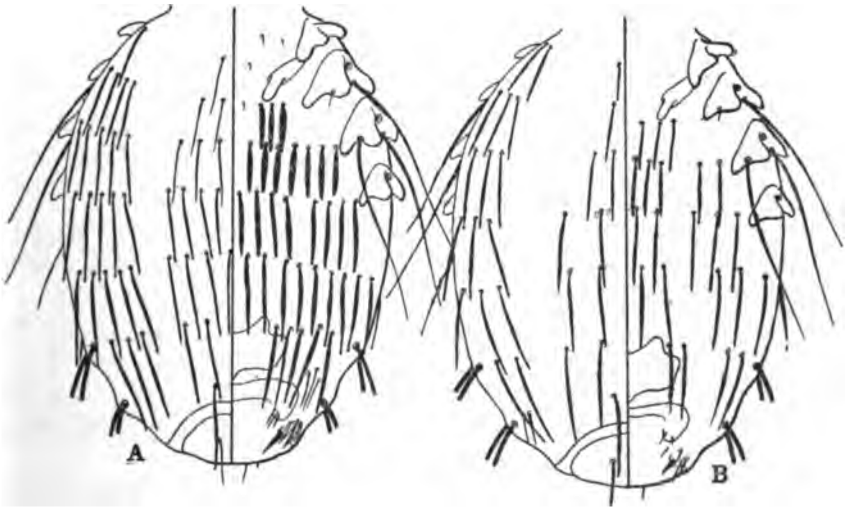


Fig. 28.—***Enderleinellus suturalis*** (Osborn): *A*, abdomen of female from ***Citellus beldingi***, California; *B*, abdomen of female from ***Cynomys leucurus***, Wyoming.

other. Between the tips lies the small pseudo-penis (*pp*). Between the parameres is an oval, ring-like piece (*e*), which perhaps represents the fused endomeres. Overlying the posterior portion of the endomeral piece is a small, flattened, elongate sclerite of doubtful homology. The posterior extremity of this piece is blunt and is tipped by a pair of small spines.

NOTES.—I am including under this species forms, the extremes of which are sufficiently different perhaps to merit recognition as species. However, these extremes are connected by a series of intermediate forms so complete that the limits of these species would be scarcely possible of definition. I therefore retain them as one species; but I shall point out the differences.

The form described above is the typical form. This occurs on *Citellus franklini, C. tridecimlineatus, Ammospermophilus nelsoni* and the various species of *Callospermophilus*. Specimens from *Callospermophilus* have previously been separated by Kellogg and Ferris as the variety *occidentalis*, but this is quite untenable.

The specimens from *Citellus beldingi* (Fig. 28 *A*) have the dorsal spines noticeably fewer, more slender and tending to be arranged in marginal and median series. Also the ventral spines are much shorter and stouter than those of the dorsum. With these specimens those from *Citellus eversmanni, Citellus mollis, C. elegans,* and probably those from *Citellus mongolicus* (represented only by males) agree quite closely.

The specimens from *Citellus osgoodi* and *C. townsendi* are similar to those from *Citellus beldingi* in the paucity and slenderness of the dorsal spines, but have the ventral spines longer and relatively more slender.

The specimens from the genus *Cynomys* (Fig. 28 *B*) all agree in having the dorsal spines few and slender as in those from *Citellus beldingi*, but the ventral spines are likewise small and slender, differing but little from those of the dorsum.

17. Enderleinellus osborni Kellogg and Ferris.

FIG. 29.

1915. *Enderleinellus osborni* Kellogg and Ferris, Anoplura and Mall. N. Am. Mam., 43–44; t. f. 15; pl. 4, f. 11; pl. 6, f. 6, Stanford Univ. Publ.

1916. *Enderleinellus osborni* K. and F., Ferris, Cat. Anoplura, *Proc. Cal. Acad. Sci.* (4) 6: 148.

HOST OF THE TYPE. *Citellus douglasi*, Covelo, Mendocino County, California. In Ferris, Cat. Anoplura, the host is erroneously stated to be *Citellus beecheyi.*

SPECIMENS EXAMINED. From *Citellus douglasi*, Cazadero and Covelo, Calif.; *C. beecheyi beecheyi*, Carmel Point, Monterey County, Calif.; *C. beecheyi fisheri*, Pleasant Valley, Mariposa County, Calif.; *C. grammurus*, Oracle, Ariz.; *C. buckleyi*, Llano, Texas; *Xerospermophilus tereticaudus*, Imperial County, Calif.

FEMALE (Fig. 29). Definitely separable from *E. suturalis* only by the fact that the fourth tergite bears a median group of from two to six long, slender setæ. The type of this species differs further from *suturalis* in that the spines, both of dorsum and venter, are much fewer and are much shorter and stouter. In specimens from other hosts, however, the spines approach the condition found in typical *suturalis*, the long setæ of the fourth tergite remaining as the only distinguishing character.

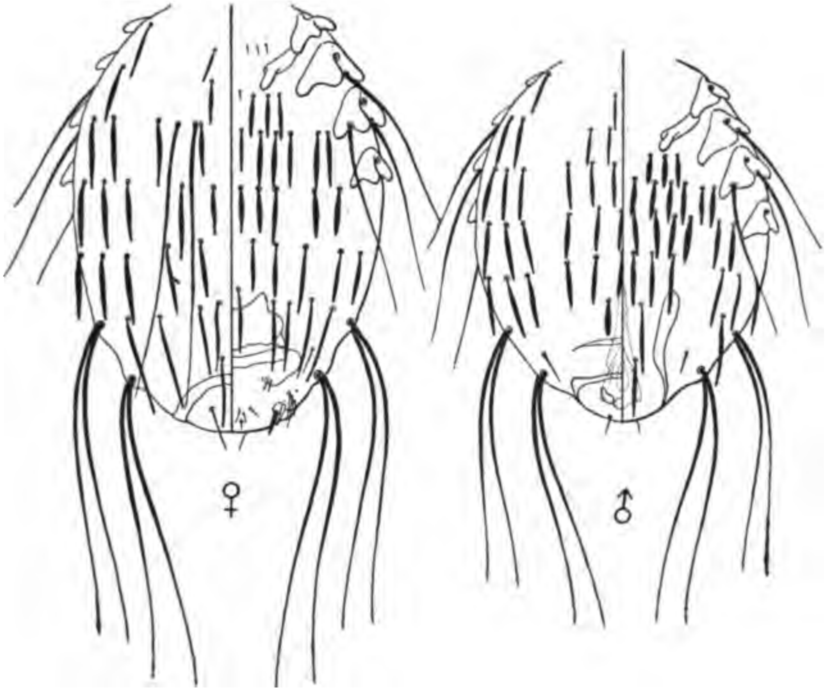


Fig. 29.—***Enderleinellus osborni*** **K. and F.: abdomen of male and female, from type specimens.**

MALE (Fig. 29). Differing from the female in the absence of the long, slender setæ of the fourth tergite. In the typical form the male may be distinguished from the male of ***suturalis*** by the much fewer and stouter spines, but in other forms it is scarcely distinguishable.

NOTES.—It is possible that this form should not be distinguished as a species, but it is easily recognizable in the female sex.

Specimens from *Citellus beecheyi beecheyi* and *C. beecheyi fisheri* agree closely with the type. Those from *C. buckleyi* and *C. grammurus* and *Xerospermophilus tereticaudus* approach more closely *E. suturalis*, differing chiefly in the long setæ of the fourth tergite.

18. Enderleinellus marmotæ n. sp.

FIG. 30.

HOST OF THE TYPE. *Marmota monax rufescens*, Grafton, S. D. Holotype, a female.

SPECIMENS EXAMINED. From *Marmota monax rufescens*, Grafton, S. D., and Elk River, Minn.; *Marmota monax monax*, Marble Cave, Mo.; Sandy Springs, Md., and Washington, D. C.

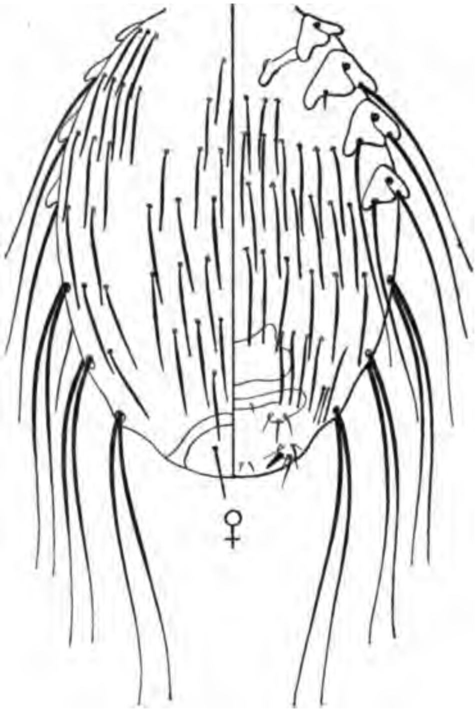


Fig. 30.—*Enderleinellus marmotae* n. sp.: abdomen of female.

MALE AND FEMALE. *Length* of the female .95 mm., length of the male 0.9 mm. Differing from *E. suturalis* and related forms constantly and chiefly in the presence of two long, slender setæ on the posterior margin of each pleural plate and at the lateral margins of the sixth, seventh, and eighth segments.

NOTES.—All the specimens at hand agree closely in the characters indicated above, and as the form is readily recognizable it may well be regarded as a distinct species.

19. **Enderleinellus tamiasis** Fahrenholz.

1916. *Enderleinellus tamiasis* Fahrenholz, *Archiv f. Naturges.*, Abt. A, **81**: 27, f. 22.

HOST OF THE TYPE. *Tamias striatus*, in the Zoological Garden in Berlin.

NOTES.—I have not been able to obtain specimens of this species although I have examined numerous skins of its reputed host, which is a native of central United States and Canada. The original description is inadequate, there being no reference to the genitalia of the male, and the description is not accompanied by adequate figures.

Genus **MICROPHTHIRUS** new genus.

Anoplura without eyes; with five-segmented antennæ, which are not sexually dimorphic and which are beset with tooth-like processes; with the anterior and middle pairs of legs small and weak, with weak claw, the posterior pair very stout, with broad, heavy claw; pleural plates consisting merely of very small sclerites, the edges of which are not free; abdominal segments with not more than one transverse row of spines; tergites and sternites of the abdomen with well-defined plates; head more or less cylindrical, not widening abruptly behind the antennæ.

HOSTS. Known only from the genus *Sciuropterus* of the rodent family *Petauristidæ,* the flying squirrels.

TYPE OF THE GENUS. *Enderleinellus uncinatus* Ferris.

NOTES.—While the single species upon which this genus is based is certainly most closely related to the members of the genus *Enderleinellus,* it is so different in numerous respects as to render a separation advisable. The small first and second pairs of legs and the stout third pair with its broad claw and the cylindrical head connect the species with *Enderleinellus;* but the absence of free pleural plates, the absence of the paired sclerites on the second sternite, and the extraordinary antennæ are sufficient grounds for a separation.

1. **Microphthirus uncinatus** (Ferris).

FIGS. 31, 32.

1916. *Enderleinellus uncinatus* Ferris, Cat. Anoplura, *Proc. Cal. Acad. Sci.* (4), **6**: 149. (Without description.)

1916. *Enderleinellus uncinatus* Ferris; Ferris, *Psyche,* **23**: 108, figs. 6–7.

HOST OF THE TYPE. *Glaucomys* (=*Sciuropterus*) *sabrinus lascivus,* Yosemite National Park, California.

SPECIMENS EXAMINED. From type host and locality only.

FEMALE (Fig. 31). *Length* 0.45 mm. *Head* somewhat longer than broad, the anterior margin broadly rounded, the lateral margins, behind the antennæ, nearly parallel. Rostrum on the ventral side at a slight distance from the apex of the head. On the ventral side of the head there are between the bases of the antennæ two irregular chitinized areas. Behind each of these areas there is a smaller area, the posterior margin of which is deeply three-toothed. The antennæ (Fig. 32*B*) are of a very peculiar type, the first segment bearing on its ventral side a series of four stout teeth and the third and fourth segments with the anterior proximal angle likewise produced into a tooth.

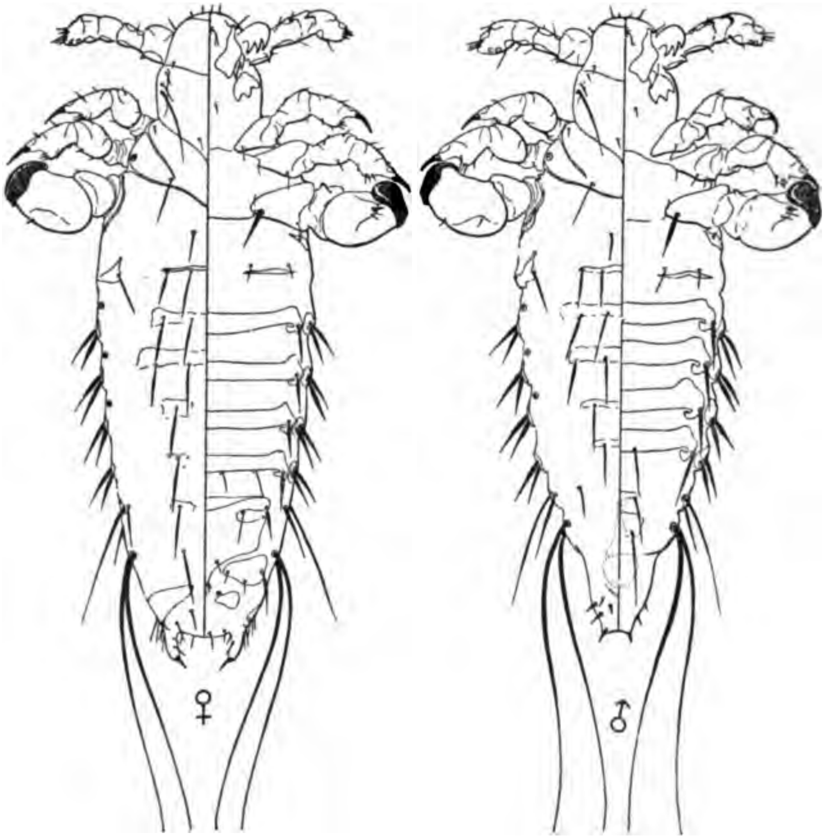


Fig. 31.—*Microphthirus uncinatus* (Ferris).

Thorax much shorter than the head, widest across its posterior margin, the division between the thorax and the abdomen scarcely indicated. Sternal plate very poorly defined but apparently quite broad, occupying the greater part of the venter of the thorax. Posterior femora each bearing a single small tooth-like process.

Abdomen elongate-oval, the apex rounded or narrowly truncate, terminated by a pair of lobe-like processes. Pleural plates present on the third to sixth segments, consisting merely of small, chitinized areas, the posterior margins of which are not free, each bearing a pair of stout, tapering, sharply pointed spines. The seventh segment bears at each lateral margin a single slender, moderately short seta and a spine. The eighth segment bears at each lateral margin a pair of long, slender setæ. Spines of the dorsum few, arranged in median groups of two to four on each segment. The tergites show a tendency toward a weak chitinization of their median portion.

On the ventral side the third to sixth segments each bear a narrow transverse sclerite which touches the pleural plates and bears at each end a stout, flattened spine. Genital plate occupying the greater part of the seventh and eighth segments.

MALE (Fig. 31). *Length* 0.35 mm. Resembling the female entirely except for its smaller size and for having the abdomen terminated by a broad, truncate process which bears several short, thorn-like spines.

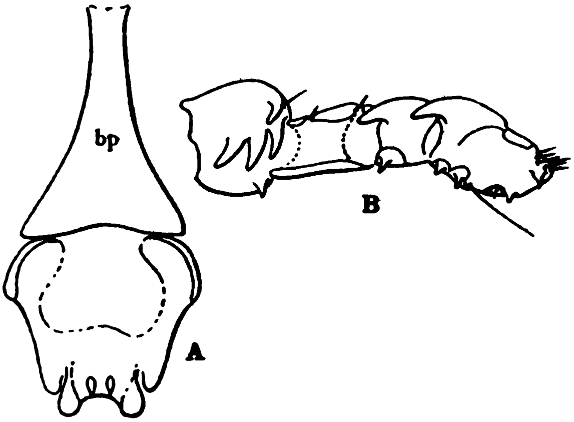


Fig. 32.—*Microphthirus uncinatus* (Ferris): *A*, genitalia of male; *B*, antenna.

Genitalia (Fig. 32*A*) very small and so highly modified as to preclude any definite conclusions as to the homologies of the parts. It is possible to recognize definitely only the basal plate (*bp*) to which is attached a broad, flattened piece, which possibly represents the fused parameres and other parts.

NOTES.—The measurements given above are from specimens which have been somewhat expanded in preparation and are consequently somewhat greater than those of the original description which were from untreated specimens. The length of the female in life is probably not more than 0.4 mm., and that of the male 0.35 mm.

LELAND STANFORD JUNIOR UNIVERSITY PUBLICATIONS
UNIVERSITY SERIES

Fossil Fishes of Diatom Beds of Lompoc, California

BY

DAVID STARR JORDAN
Chancellor-Emeritus of Stanford University

AND

JAMES ZACCHEUS GILBERT
Teacher of Zoology, Los Angeles High School

STANFORD UNIVERSITY, CALIFORNIA
PUBLISHED BY THE UNIVERSITY
FEBRUARY, 1920

STANFORD UNIVERSITY
PRESS

TABLE OF CONTENTS

PAGE
Character of deposits at Lompoc 5
Report of Dr. Albert Mann........ 6
List of species found at Lompoc 7
  Carcharodon 9
  Xyne........ 10
  Lygisma 12
  Genera of Mackerels........ 13
  Turio 15
  Thyrsion 17
  Ocystias 18
  Thyrsocles 19
  Zaphleges 23
  Zelosis........ 24
PAGE
Aræosteus........ 25
Emmachære........ 26
Rhythmias 27
Plectrites........ 28
Lompoquia........ 29
Lompochites 30
Rixator........ 31
Hexagrammos........ 36
Ozymandias 36
Evesthes........ 37
Zoropsetta 39
Diatomœca........ 40
Eclipes 41
Atkinsonella 41
Quæsita 43

THE FOSSIL FISHES OF THE DIATOM BEDS OF LOMPOC, CALIFORNIA

In a previous paper *(Fossil Fishes of Southern California:* Leland Stanford Junior University Publications, issued September 16, 1919) the present writers have noted a number of new species of fishes, of Miocene Age, from the deposits at Lompoc.

Since that time, through the courtesy of Mr. Arthur H. Krieger, director of the Celite Products Company, and his assistants, Messrs. Edward J. Porteous and Edward B. Starr, Dr. Gilbert and Dr. Jordan have successively visited these deposits, making extensive collections. Still later, Mr. Willard J. Classen, a student in Geology at Stanford University, through the kindly interest of Mr. Timothy Hopkins, has spent some time there securing fossil fishes for Stanford University. A large collection of fish has been obtained, this forming the basis of the present paper.

The Lompoc deposit itself is wholly unique. It lies in Santa Barbara County, California, within an angle on the north side of the Sierra Santa Ynez, a range composed mainly of Miocene sandstones and shales. This angle or ancient bay covers about four square miles. In this space a continuous and almost uniform mass of diatoms has been deposited, to the maximum depth of 1,400 feet.

The erosion of a stream on the west side has cut this deposit through to its bottom of yellowish sandstone. Over most of this space, the diatom deposits come to the surface, but in places the mass is overlaid by a coarse, hard breccia or conglomerate, containing many bones of whales, and occasionally teeth of sharks. On the extreme west, it is overlaid by limestone in which a species of Pecten is very abundant.

In places, there are thin layers of flinty rock, apparently of animal origin, interstratified with diatoms. At one horizon, about six feet above the Xyne layer noted below, there is a thin stratum of volcanic glass. Scarcely anywhere in the whole mass does any sand or clay appear. This shows that the deposit was made in quiet water undisturbed by fresh water or rains. It may be noted that in deposits of the Monterey period of the Miocene age, from Monterey to San Diego, diatoms abound, sometimes mixed or interstratified with sand or clay as about Los Angeles, at other places forming immense deposits. It has been thought that such deposits when buried under later rocks, as in Kern County and parts of Santa Barbara, are the source of the oil found in these districts. When the deposits are not covered, as at Lompoc, it is presumed that the oil has all evaporated.

The probable conditions of the deposits at Lompoc are thus indicated by Dr. Albert Mann of the Carnegie Institution at Washington, to whom we have sent specimens of material from various parts of the beds.

"The samples of diatom material received seem to indicate the following facts, unfortunately of small value for your fish-deposit problem:

"1. Marine, with no infiltration of fresh or brackish water forms.

"2. Not plankton material. Diatoms all large and massive. Heavy sponge-spicules abundant; heavy Radiolaria present, though few.

"3. Not transported a great distance nor by swift or violent currents to their present position, as the diatoms, though somewhat broken by pressure, show no wear; also as there is an absence of any appreciable quantity of sand, shells, clay, etc.

"4. Not a complex of materials from different localities, as the diatoms, though abundant, are remarkably few in species, being chiefly two species of COSCINODISCUS.

"5. Slowly and evenly deposited in their present position, with regular fluctuations in quantity (seasonal ?), resulting in the mass being formed of thin laminated plates, easily separable, but uniform in composition.

"It looks to me as if my samples were laid down *in situ*, in some quiet, shallow marine bay, into which no considerable quantity of fresh water drained. . . .

"As to the oil relationship, I do not know a thing. As you know, all sorts of theories, have been advanced regarding the contribution of diatoms to the so-called mineral oils. But I had the good luck last summer at Woods Hole to secure a perfectly pure gathering of plankton diatoms of a single species, unmixed with a single Copepod, Nematode, or any other organism. I secured a solid liter of it, and it is now in the hands of a chemist for the ether extraction of the oil, which will be sufficient in quantity for the first accurate analysis of diatom oil. . . .

"The large amount of oil laid up as a reserve food material by diatoms is certainly significant. I have found it making fully 50 per cent of the bulk, and I have never found it to be less than 5 per cent."

The economic use of these deposits, made up of the silicious shells of microscopic plants, known as diatoms, is at present two-fold. The material is cut into bricks, which, being non-conductors of heat, are used as packing about steam-pipes and the like, and sold as Sil-O-Cel. The second use is for filtering liquids. The silicious shells are insoluble, and poured into any fluid, they carry at once to the bottom all solids in suspension. The whole can then be filtered and the liquid is left perfectly clear. This is "Filter-cel," made of the crushed rock. "Celite" is a meaningless trade name, adopted for the output of this particular deposit.

Since the period of deposition, the rocks of the Santa Ynez range have undergone some folding, leaving the strata of diatoms nowhere horizontal. The Xyne layer stands where examined by us at an angle of about thirty degrees, the north side highest.

From the natural history view, this stratum is the most remarkable feature of the deposit. At about 950 feet from the bottom, at a certain horizon everywhere the same, is a layer of an extinct herring, described by us in a previous paper as XYNE GREX. Individuals lie on the bottom wherever this layer has been exposed. They are all of about the same size, about six inches long, all adult and nowhere mixed with any other fish. Apparently the species swarmed in the bay for spawning purposes, and the entire mass was heated, suffocated, or otherwise killed in an instant and with no evidence of agony or distortion.

In the rocks above, occasional examples are found, always as imprints, while those of the main mass have been mostly carbonized and left black or nearly so. The other fishes found in these deposits mainly occur in the upper strata. Only large fishes, a foot or more—herrings excepted—are found here, these being mainly mackerel, flounders, bass, rock-fish and the like, which were apparently in pursuit of the herring. All of these are described and figured in the pages which follow. This Lompoc fauna contrasts strongly with that described from the impure diatomaceous shales at El Modena and Bairdstown—of the same age, but evidently under different conditions. All the fishes of these deposits are immature, evidently residents of shallow bays within the archipelago which now forms the counties of Los Angeles and Orange.

The species thus far found at Lompoc are the following (new names in italics):

Family LAMNIDÆ

1. CARCHARODON ARNOLDI Jordan.

Family CLUPEIDÆ

2. XYNE GREX Jordan and Gilbert (J. Z.).
3. XYNE *fitgeri* Jordan and Gilbert.
4. LYGISMA TENAX Jordan and Gilbert.

Family SCOMBRIDÆ

5. *Turio wilburi* Jordan and Gilbert.
6. *Thyrsion velox* Jordan.
7. *Thyrsocles* KRIEGERI Jordan and Gilbert.

7A. *Thyrsocles escharion* Jordan.

8. *Ocystias sagitta* Jordan.

Family ZAPRORIDÆ.

9. *Aræosteus rothi* Jordan and Gilbert.

Family ZAPHLEGIDÆ

10. *Zaphleges longurio* Jordan.

Family SERRANIDÆ

11. EMMACHÆRE RHACHITES Jordan and Gilbert.

Family SPARIDÆ.

12. *Rhythmias starrii* Jordan and Gilbert.
13. *Plectrites classeni* Jordan.

Family SCIÆNIDÆ.

14. LOMPOQUIA RETROPES Jordan and Gilbert.
15. *Lompochites hopkinsi* Jordan

Family SCORPÆNIDÆ.

16. *Rixator porteousi* Jordan and Gilbert.
17. *Rixator ineziæ* Jordan and Gilbert.

Family HEXAGRAMMIDÆ.

18. HEXAGRAMMOS ACHRESTOS Jordan and Gilbert.

Family OPHIODONTIDÆ.

19. OZYMANDIAS GILBERTI Jordan.

Family PLEURONECTIDÆ

20. EVESTHES JORDANI J. Z. Gilbert.
21. EVESTHES *hooveri* Jordan.
22. DIATOMŒCA ZATIMA Jordan and Gilbert.
23. *Zororhombus veliger* Jordan.

Family BROTULIDÆ.

24. ECLIPES VETERNUS Jordan and Gilbert.

Family ———.

25. *Atkinsonella strigilis* Jordan.

Family DUSSUMIERIIDÆ.

QUÆSITA *alhambræ* Jordan and Gilbert.
QUÆSITA *fragilis* Jordan and Gilbert.

Family **LAMNIDÆ**

1. **Carcharodon arnoldi** Jordan.

No teeth of sharks have been found in the diatom deposits. In the breccia which overlies part of these beds, shark's teeth occur occasionally among the broken bones of whales.

We obtained two such teeth corresponding to the form called CARCHARODON RIVERSI Jordan, which we take to be a back tooth of the common CARCHARODON ARNOLDI.

Family **CLUPEIDÆ.**

2. **Xyne grex** Jordan and Gilbert.

(Plates I, II, III)

In the original description of this species (Jordan and Gilbert, Fossil Fishes S. Cal., p. 25) it is stated that numbers XXIV and XXVIII, Stanford Collections, came from Bairdstown. This is an error: all came from the same stratum as the type slab (CVIII) from Lompoc.

Outside the mass of this species, which covers four square miles of deposit all at the same geological level, this fish is scantily distributed through the rocks higher up.

The most remarkable feature of the diatom beds is the evidence of a tremendous catastrophe which overwhelmed millions of individuals of this herring, at a single moment, apparently in the spawning season.

It is evident that these fishes were gathered together in the sheltered bay in which these deposits occur. At a horizon 950 feet from the base of the deposit is the layer of this species. The individuals are of about the same size (6 to 8 inches) lying flat, not distorted nor much piled. All are in the same horizon and this wherever opened is covered with these fishes. No other species is mixed with them, and there are but few remains of the species in the rocks higher up. Nearly all these specimens are dark brown or black, showing them to have been carbonized. In the rocks above, this and other species are mainly prints merely, the marks of their bones being replaced by diatoms.

Of this species numerous slabs were obtained, through the energetic help of Messrs. Krieger, Porteous, and Starr, and Mr. John Sells, foreman. These were taken from a tunnel near the north side of the deposit. The largest slab is about eight feet by four, containing hundreds of individuals.

The genus XYNE is characterized by a symmetrical herring-like form, the belly, however, compressed and armed with sharp lanceolate scutes, the dorsal nearly median and opposite the ventrals, the bones of the head finely striated and enameled. The vertebræ are about 45, a character which separates the genus from the modern forms with sharp ventral scutes. We find no trace of dorsal scutes nor of finlets; the slender ribs are about as long as head and nearly four in length to base of caudal. Intermuscular bones are very evident: the ribs are forked below, and the ventral spinules are well marked.

We give the record of the most perfect examples found above the horizon in which the multitudes occur.

No. 110 is about six inches long, the back abruptly broken and the head crushed; ribs 4½ in length of body. Vertebræ 43; 24 behind insertion of ventrals. These are nearly under middle of dorsal, as usual in this group.

No. 116. Eight inches long; is well preserved: mouth large, the lower jaw projecting; ventrals just behind front of dorsal; vertebræ 43; 23 caudal vertebræ; depth of body 5 in length.

24. Broken in three parts, the head much crushed.

27. Fair.

36. Two specimens with ECLIPES VETERNUS. Tail and posterior dorsal rays.

39. Backbone.

51. Fairly good imprint.

123. Fair.

126. Two in bad order.

153. Bad condition.

157B. In fair shape; no head nor fins.

203. Fragments of four fishes.

243. Fair condition.

288. Two damaged skeletons.

3. **Xyne fitgeri** Jordan and Gilbert, new species.

(Plates IV, V)

Besides XYNE GREX, a second species of herring occurs in these deposits. This we may provisionally refer to the same genus. It is deeper in body, with the head much heavier, the form much less symmetrical. The vertebræ are 45 in number, rather heavier than in XYNE GREX, and the anterior vertebræ seem loosely connected, becoming readily crushed out of place, or as in the type example bowed into an arch. The ribs are longer than in XYNE GREX, nearly as long as head, about 3¼ in length of body.

The form of the head and the tendency to curvature of the backbone, with the less symmetrical form of the body, may indicate generic distinction for this species, but it is certainly a near relative of XYNE.

The two species (possibly identical with each other) already described by us from El Modena and Carpinteria (ELLIMMA ELMODENÆ * and ELLIMMA BARBARÆ) are certainly nearer XYNE than ELLIMMA; and may be temporarily assigned to XYNE, with which they agree in general traits and especially in the number of vertebræ (44). The ribs are longer than in X. GREX or X. FITGERI, being about 3⅓ to 3½ in length of body. It is very doubtful whether these species belong to the group of double-armed herring, the presence of dorsal scutes being uncertain. In this group the Eocene genera, DIPLOMYSTUS, KNIGHTIA, ELLIMMA, and ELLIMICHTHYS, find their place.

The type of XYNE FITGERI is a specimen (No. 167) seven inches long, lacking the upper and lower fins.

Body heavy forward with large head. Head 2⅘ in length to base of caudal; depth about 2½. Head very large, with steep, straightish profile; eye moderate; lower jaw long, low, protruding; maxillary 1⅗ in head. Vertebræ 43, the first 24 forming a notable arch, its arc 2½ times its height, a character apparently due to distortion, as only partially shown in other specimens. Vertebræ rather longer than deep, ribs many, very slender, 1¼ in head, nearly 3¼ in body; some intra-muscular bones; neurals and hæmals moderate, interspinal bones weak and mostly obliterated; pectoral fins narrow, inserted low; dorsal, anal, ventrals, and scales wholly obliterated except for the lanceolate sharp ventral scutes which are about 15 in number; caudal strong, well forked, the lobes 1⅕ in head, the rays slender, about twenty-five to be counted.

This specimen is preserved in duplicate, the other half (167B) being exactly like it. The species is named for Mr. August Fitger, the excellent proprietor of the Lompoc quarries.

A second specimen (26) is in fair condition, 6 inches long, the vertebral column elevated anteriorly, but not perfectly arched; dorsal and ventral present, the ventral just behind front of dorsal. Head 3 in length; depth 3; vertebræ 43.

Another specimen (No. 241), 4½ inches long, has the head large and with steep profile. The head is, however, crushed back on the body, so that the dorsal fin is close behind it, and the anterior vertebræ are dislocated and scattered about the nuchal region. There are 25 to 28 vertebræ behind the line of insertion of dorsal. The vertebral column in this species seems exceptionally fragile, for when not arched, it is usually broken or distorted.

A specimen 3½ inches long (the total fish about five) (No. 205), with the head and tail broken, much resembles the type of ELLIMMA EL-

---

* We may here note that in the original description of ELLIMMA ELMODENÆ "head 2⅓ in length" is a misprint for "head 3¼."

MODENÆ as figured by Jordan and Gilbert. It is, however, unquestionably a member of this species. The dorsal, pectoral, and ventral fins are fairly preserved, as are also the vertebræ and the ribs. There are eight vertebræ before the ventrals. Ribs about 22. Vertebræ rather deeper than long, those anteriorly a little elevated.

Other specimens are the following:

29. Probably the same, body only, anterior vertebræ out of place.

44. Vertebral column little arched; pectoral complete, short, 2½ in head; about 15 scutes before ventrals.

124. Fair; head large, broken; ventrals a little nearer gill opening than base of caudal. Caudal well forked, anterior vertebræ moderately arched, vertebræ 45, dorsal and anal wanting.

140. Young—the vertebral column little arched. Vertebræ about 40—poor condition.

507. In fair condition, much like No. 26. The backbone not arched, but undulated.

146. Column a little arched; paired fins wanting.

149. Bad order; column little arched.

150. Broken head.

196. An example with a big head, deep body, and median dorsal. Vertebræ about 40, the column somewhat arched anteriorly; belly with strong scutes.

244. Broken torso, showing 15 ventral scutes.

235. Shows a short dorsal nearer head than base of caudal; spinal column little arched, broken, apparently very fragile. The whole structure very weak.

274. Broken torso, vertebral column somewhat arched.

278. Part of a large example. No new features.

291. Part of side—no arch in vertebral column.

314. Broken skeleton and head. The vertebral column a little arched anteriorly.

324. Head and torso much broken.

411. Fair condition; shows ventral scutes and paired fins. Head large, 3½ in length, depth 3; 13 scutes before ventrals.

In addition to those noted above there are numerous fragments more or less definitely referable to this species.

4. **Lygisma tenax** Jordan and Gilbert.

No. 79. Seven inches long.

Head and vertebral column, the head badly crushed, the vertebral column intact and much twisted as in the original types; neural and hæmal spines strong, interhæmals, interneurals and fins lost; head large, with large orbit, median in position; lower jaw prominent; pectoral inserted low. Vertebræ about 40, reduced posteriorly, longer than deep and constricted. No scales or scutes preserved.

We identify this specimen doubtfully by the tough and twisted spinal column, which seems to be a distinctive trait.

No. 121 shows the head with some of the vertebræ, of the same species.

Family SCOMBRIDÆ

Next to the evidence of the extraordinary catastrophe which overwhelmed the herring known as XYNE GREX, the most remarkable feature of the Lompoc beds is the presence of five different species of mackerel—predatory fishes, doubtless lured into the bay to feed on the herring.

All of these forms are related to the living species known as Spanish mackerels, SCOMBEROMORUS Lacépède (CYBIUM Cuvier). But differences in the vertebral column, the dentition and the interspinal bones, necessitate the recognition among them of four distinct genera. To these, we assign the names of TURIO (WILBURI), THYRSION (VELOX), THYRSOCLES (KRIEGERI), and OCYSTIAS (SAGITTA).

The six genera of SCOMBRIDÆ found in the Miocene deposits of Southern California may be thus compared with each other and with the living genera of this type.

(*a*) Anterior vertebræ simple, not "trellis-like"; teeth not serrate, nor greatly enlarged; posterior vertebræ not held immovable by backward extensions from apophyses; no canine teeth; body without corselet of modified scales, as far as known.

(*b*) Vertebræ few, about 28 in number; dorsal spines about 10 in number, slender, close-set. (Allies of SCOMBER.)

(*c*) Interspace between dorsals short, not more than the length of two vertebræ; body rather deep, tapering backward; the depth about 3½ in length; teeth unknown; opercular region short. TUNITA.

(*cc*) Interspace between dorsals long; as long as four or more vertebræ; body elongate, tapering slowly backward; depth about 4⅝ in length; interhæmals slender and short, weak.

(*d*) Opercular region moderate, teeth unknown (supposedly conic and pointed, close set). AUXIDES.

(*bb*) Vertebræ about 28; dorsal spines about 20. Opercular region very long, longer than distance from front of eye to edge of preopercle; teeth compressed, wide set, about 20/20 on each side; body moderately elongate, the depth about 5 in length; dorsal spines slender, close-set, the anterior elevated. (Ally of EUTHYNNUS.) TURIO.

(*bbb*) Vertebræ numerous, 40 to 55, subquadrate, strongly grooved; post-ocular region not expanded, shorter than rest of head; dorsal spines low, slender. (Allies of SCOMBEROMORUS).

(*e*) Vertebræ 40 to 42, rather strong, deeper than long, the depth of one about equal to one-third the distance to the base of the soft dorsal; opercle strongly striate; interneurals short, slender, and weak.

(*f*) First dorsal of about 10 spines; body rather robust; teeth conic, pointed, subequal, in bands, 35 to 40 on each side of jaw; depth about 5 in length. THYRSION.

(*ff*) First dorsal of about 22 slender spines; body very slender, the depth about 7 in length; teeth unknown. OCYSTIAS.

(*ee*) Vertebræ 46 to 48; deeper than long. Interhæmals very long and rather strong, arranged in a parallel grate-like series, reaching about ⅜ distance to backbone. Vertebræ 22 + 25 = 47; body rather robust, the depth about 5 in length.

(*g*) First dorsal of 15 to 20 slender spines; teeth compressed, well-spaced; probably about 35 on each side. THYRSOCLES.

(*gg*) First dorsal of 15 to 18 low, slender spines.

(*h*) Teeth scarcely compressed, about 25 in each side; depth 5¼ in length. CHRIOMITRA.

(*hh*) Teeth much compressed, wide-set, about 12 in each side; interhæmals of moderate length, close-set, parallel and nearly straight, depth 4½ in length. SCOMBEROMORUS.

Of the other generic names applied to fishes of this group, ACANTHOCYBIUM Gill (PETUS), with broad, serrated teeth, and the body robust, is well defined. LEPIDOCYBIUM (Gill) (FLAVOBRUNNEUM), with canine teeth, is doubtless also valid. APODONTIS (Bennett) (IMMUNIS), scantily described (teeth conical, wide-set), is probably a typical SCOMBEROMORUS, as is also CYBIUM (Cuvier) (COMMERSONI). CHRIOMITRA is, no doubt, a valid genus, with interhæmal as in THYRSOCLES and numerous gill-rakers.

The fossil genus SCOMBERODON van Beneden (*Bull. Acad. Royale, Belgique* (2), XXXII, 504-512, 1871) is based on a huge mackerel found in the clays of Rupelian age (Oligocene) at Boom and Rupelmonde in Belgium. It is allied to ACANTHOCYBIUM and remotely to SCOMBEROMORUS, but its teeth are very large, entire, unequal, and subconic, set in extremely massive jaws. The teeth are relatively few, about 18/18 in each jaw. The caudal vertebræ are remarkable in having a special bone covering, depriving them of all mobility, as in the tunnies. This character is not found in the Miocene genera nor in SCOMBEROMORUS. The species in question, SCOMBERODON DUMONTI, must have reached the length of seven feet (two meters). There seems to be no doubt of the validity of the genus SCOMBERODON.

Turio (Jordan and Gilbert), new genus.

(Type: Turio wilburi Jordan and Gilbert.)

Mackerels of rather small size, with the body moderately elongate, the vertebræ about 28; longer than deep and not strongly grooved. Head long, apparently pointed; mouth large; traces of a strong lower jaw; the opercular region much expanded, its length about 1½ in rest of head and greater than distance from front of eye to edge of preopercle; teeth compressed, rather wide-set, smaller than in Scomberomorus, the number about 25/25 on each side. First dorsal anteriorly high, of about 20 slender spines; interhæmals short, slender, and not straight, almost hair-like. This genus has the vertebral column of Scomber and Auxides, differing from these, as well as from Thyrsocles, in the very much longer opercular region. From Tunita, which has also high dorsal spines it is separated by the much longer first dorsal. It differs from Thyrsocles in the form of the dorsal fins and in the very much weaker interneurals, in the much more slender vertebræ, in their smaller number and in the weakness of the lateral ridges. The opercular region is much longer in Turio than in Thyrsocles and the head perhaps more pointed.

The dentition of Auxides, which genus Turio much resembles, is unknown, but that genus is presumably related to Scomber, which has conical teeth, in bands. The nearest ally of Turio is probably Euthynnus.

We propose for this genus the name Turio, a wand or shaft, the the Latin equivalent of Θύϱςις, the root of Thyrsites.

5. **Turio wilburi** Jordan and Gilbert, new species.

(Plates VI, VII)

Type 49A. Body with 28 vertebræ, head broken, showing wide mouth and a gill arch with filaments. Head 3½ in length; depth 3¾; three spines of dorsal perfect; the third very long, 1⅔ in head, 7 or 8 others lying down, the total number indicated by interneurals being 20; 13 rays of soft dorsal shown, a short interspace between; vertebræ constricted, longer than deep, with three grooves. Caudal wide, forked, on a slender peduncle; neurals and hæmals long; interneurals and interhæmals very short and slender, almost hair-like; those above in pairs; ribs very oblique, short. Ventrals I, 5, the stout spine long. Specimen a foot long.

No. 21 is a body without head, 11 inches long. This specimen shows 26 vertebræ from the front of the spinous dorsal, 15 from the front neural spine of the first anal ray; these are relatively slender, longer than deep and somewhat constricted, with no conspicuous lateral ridges, and with moderate, not very oblique, neurals and hæmals; the interneurals and interhæmals notably short and slender; the interneurals very much smaller than in THYRSOCLES. Ribs slender, short, directed strongly backward; hypural plate obscure. First dorsal of about 20 spines, these very slender, close-set, and rapidly shortened to the last, the first three high, nearly equal to depth of body at base, which is 5½ times in distance from the snout to base of caudal. Second dorsal showing about 12 slender rays; the distance from its front to front of first dorsal 2⅙ in distance from front of first dorsal to base of caudal; distance between dorsals 3⅙ in this measurement; insertion of anal under about fifth ray of second dorsal. Caudal strong, widely forked, its rays 15 + 15, its lobes equal, 5½ in length of body, the outer rays much shortened.

Another specimen, apparently of the same species (No. 178), shows the head and body to the second dorsal fin. It is in poor condition, being crushed and distorted, the long head badly broken, a few teeth, compressed, formed as in SCOMBEROMORUS, preserved, but the fins all twisted from their natural position and none well preserved. About twelve vertebræ precede front of soft dorsal.

A counterpart (No. 177) shows crushed head only, with straight profile, pointed snout, longer than eye, which is twice in distance to front of opercle, and 2½ in breadth of opercle behind it, thus nearly 6¼ in head. The long straight gape extends beyond the eye. Opercular region very long, the distance from gill opening to preopercle greater than distance thence to front of eye.

Occasional rather small narrowly triangular compressed teeth occur along the edges of both jaws, rather less narrowed and crowded anteriorly than in THYRSION VELOX.

Another specimen (180) shows the head and anterior parts badly damaged, with but few vertebræ preserved, these longer than deep, and with traces only of first dorsal and anal fins.

Pectoral well preserved, of about eighteen rays, inserted high; ventrals well developed but broken, inserted before pectoral; posterior part of head rather long.

Another head with part of body (No. 7) seems to belong to this species. Head long, with pointed snout and long jaws on which a few compressed, spaced teeth are shown, the length of head greater than depth of body. The opercular region very long, much longer than in THYRSOCLES. Preopercle with an enlarged angle turned downward, as in the types of AUXIDES, but the striæ on its surface very fine, much finer than in AUXIDES.

First dorsal with slender close-set spines, apparently about 20 in number; pectorals and ventrals present but distorted. Vertebræ slender, longer than deep, somewhat constricted, the first neural spines of the dorsal attached to the first vertebra. Eleven vertebræ preserved.

No. 6. Broken fish 14 inches long. Vertebræ 13 + 25 = 28, longer than deep, smaller anteriorly, more or less three-grooved, part of them nearly plain. Head much broken, 3⅝ in length to base of caudal; depth about 5¼ in length; preopercle with fine striæ on exserted part; pectorals much broken; ventrals just behind their insertion; first dorsal with 8 spines preserved, slender, close-set; soft dorsal well separated, small, of about 12 feeble rays preserved. The interneurals of both dorsals very short and slender, a little shorter than the slender interhæmals. Caudal broken, forked. Same slab with a small sample of XYNE GREX.

No. 180. Fragments of a large fish, apparently TURIO, in bad condition.

10B. Backbone with anal fin, 7½ inches long.

The species is named for Dr. Ray Lyman Wilbur, President of Stanford University.

Thyrsion Jordan, new genus.

(Type THYRSION VELOX Jordan.)

This genus is characterized by the general form of the Spanish mackerels, the depth about five times in length to base of caudal, the vertebræ strong, 40 in number. The interspinal bones weak, the spinous dorsal of 10 to 20 weak spines, and the teeth conical, in bands. The number of dorsal spines cannot be ascertained.

6. **Thyrsion velox** Jordan.

(Plates VIII, IX)

The type of the species (No. 153) shows the head and anterior part of the body. The whole part preserved, 9 inches long. Head large, with long pike-like jaws, its length half more than presumable depth of body at front of first dorsal. Depth of head about 1⅚ in its length; jaws very long, apparently pointed, the tips broken, the maxillary 1⅔ in head. Teeth in upper jaw sharp, entire, even, close-set, rather narrowly triangular or possibly conical in form, 50 or 60 on each side in upper jaw, none of them canine-like, and perhaps all in one row; more likely in bands. Anterior teeth narrowed and crowded; lower jaw strong, its teeth partly preserved, similar to those above, opercle large, rounded.

Fourteen vertebræ preserved, these rather small and squarish; 10 in the length of upper jaw; the neural spines slender, directed rather evenly backward; hæmal spines smaller. First dorsal with but three slender, shortish spines preserved, the first longest, inserted behind pectorals over the sixth vertebra; its interneural springs from between first and second; pectoral little below vertebral column, of about 18 rays of moderate length, the upper longest, the lower rays rapidly shortened; about 2⅘ in head; a trace of ventrals just before insertion of pectorals, eye obliterated; no trace of scales.

No. 127. Fourteen inches long.

This specimen shows the whole body with crushed head, soft dorsal and anal lost; vertebræ certainly 40, all much deeper than long, with fine grooves. Head long, conic, pointed, 3½ in body. Depth about 5¼; postocular part of head rather long, about as long as snout, opercle strongly striated. Teeth obliterated; pectorals lost, ventrals moderate, apparently I 5. First dorsal slender, represented by about six close-set spines, the first of those over ninth vertebra; interneurals slender and weak. Anal, with interhæmals, wholly lost; caudal forked, damaged. Caudal peduncle less slender than in THYRSOCLES. The caudal with rudimentary rays at base.

If Nos. 127 and 153 are really of the same species, the teeth are materially different from those of SCOMBEROMORUS.

The fish has much in common with ZAPHLEGES and may prove to be not a mackerel at all.

Ocystias Jordan, new genus.

(Type: OCYSTIAS SAGITTA Jordan.)

A large mackerel with the body very slender, the depth 6⅔ in length, the vertebræ 21 + 21 = 42, as deep as long, the posterior more elongate, all sharply grooved. Head moderate, the opercle not expanded, less than half postorbital part of head; teeth unknown. First dorsal of about 22 slender spines, the soft dorsal inserted close behind it; interneurals very short and slender, curved, almost hair-like.

This genus resembles SCOMBEROMORUS in form, and in the form of the spinous dorsal; its interhæmals are much more slender than in that genus. The vertebræ are fewer in number than in SCOMBEROMORUS. Whether the teeth are those of SCOMBEROMORUS is as yet unknown. The body of no other known mackerel is quite as slender.

7. **Ocystias sagitta** Jordan, new species.

(Plate X)

Type (No. 20) 27 inches long, the whole fish, with damaged head.

Body very long and slender, even for a mackerel, more elongate than in THYRSOCLES or TURIO. Head 5½ in length to base of caudal; depth 7⅕. Head broken, the opercle rounded, the posterior part of head much shorter than in TURIO.

Vertebræ 21 + 21 = 42, the anterior hour-glass shaped, as deep as long, the posterior larger and more elongate, sharply grooved.

Dorsal fins separate, the first beginning behind base of pectoral, of about 22 very slender spines, rather wide-set, the anterior highest, 2½ in depth of body. Soft dorsal low, of 16 or more slender rays, anal similar, beginning just behind front of first dorsal. The number of rays not certain. No trace of finlets; pectorals rather broad, of 15 or more rays, broken; ventrals obliterated. Caudal rather large, wide forked, the equal lobes about 5 in body; neural and hæmal spines rather strong, especially mesially; the last few vertebræ with but traces, indicating a very slender caudal peduncle. Interneurals all short and small, shorter than the dorsal spines and rays, interhæmals also very small and slender, shorter than the rays, about five times in depth of body at that point, very oblique, contrasting sharply with the strong, long, parallel interhæmals of Thyrsocles; ribs slender, very oblique.

With much resemblance to the associated Thyrsocles and Thyrsion, the present species is sharply distinguished by the very short and weak interhæmals and interneurals, by the many-rayed first dorsal fin and by the relatively short tail. From Turio, which has also weak interneurals, it is separated by the more numerous and shorter vertebræ; it is the most slender species of the mackerel family yet known. For this species is proposed the name of Ocystias sagitta (ὀκύστος, swiftest).

Thyrsocles Jordan and Gilbert, new genus.

(Type: Thyrsites kriegeri Jordan and Gilbert (1919).

Large mackerels with the body rather elongate, the depth about 4⅔ in body, the vertebræ about 22 + 25 = 46 in number, quadrate in form, little constricted, each about as deep as long, each conspicuously three-ridged. Head large, the opercle moderate, occupying less than half post-orbital part of head; mouth large, with small, compressed, wide-set teeth so far as ascertainable. First dorsal weak, of 10 to 20 slender spines, not much elevated. Interhæmal bones unusually long, parallel, the anterior curved, the others straight, forming a conspicuous grate-like structure, these bones extending two-thirds the distance to the back bone, and more than one-third depth of body at insertion of anal, which is well behind front of soft dorsal.

This genus may be regarded as an ally of Scomberomorus, having similar vertebræ and interhæmals, but the anal farther back, and the teeth smaller and apparently much more numerous. The number of dorsal spines is uncertain. In Scomberomorus (maculatus, cavalla, commersoni examined) the interhæmals are strong and parallel, much as in THYRSOCLES, but rather shorter, ¼ to ⅓ depth of body at insertion of anal. In these species the teeth are large, wide-set, about 11 to 13 on each side.

8. **Thyrsocles kriegeri** Jordan and Gilbert.

(Plates XI, XII)

Of this species we have a fine example (No. 303). Body without head, well preserved, fifteen inches long. Depth under front of anal 2⅕ times in distance to base of caudal; anal inserted below eighteenth vertebra, under middle of second dorsal; neurals nearly straight; anal fin with about 18 slender rays, the first not falcate, the rays progressively shortened, the interhæmals very long, slightly curved, parallel, the hæmal spines bent strongly backward. Body deeper than in the type of T. KRIEGERI, the depth 4 in length of body proper, the caudal peduncle seeming stouter, an appearance due to the crushing together of the last five vertebræ. Pectoral with about 25 rays, the upper longest, the fin very broad, the lower rays very rapidly shortened, the lowest not one-tenth the length of the upper, which are 2½ in depth of body. Ventrals I, 5, well developed, inserted slightly before pectoral, nearly ⅔ length of pectorals. Vertebræ probably 22 + 24 = 46, little constricted, about as deep as long, the last four or five smaller. No hypural plate. Caudal deeply forked, its rays about 15 + 15, the lobes about equal to the depth of body. The soft dorsal with about 15 rays. No trace of scales or finlets. First dorsal obliterated, and only the anterior interneurals showing. In this specimen the upper edges of the vertebral centra are turned backward from the axis.

No. 306, in duplicate. Twenty inches long, the whole fish about 25. A large fish, the head altogether crushed, but showing compressed moderately spaced teeth in a single row. Vertebræ 40 or more, deeper than long. Neurals and hæmals strong; first dorsal lost; second rather high, with strong parallel interneurals reaching more than half way to backbone. Interhæmals long, slender, curved, oblique, parallel. Anal fin inserted much behind soft dorsal; ventrals misplaced, apparently I, 5; pectorals broken.

No. 51. 8½ inches long, preserved in duplicate. Each half is the imprint of the middle of the body. It shows twenty-three vertebræ, quadrate, little constricted, with three strong lateral ridges on each side, appearing as grooves in the imprint. Soft dorsal and anal preserved, the first with about 20 rays (19 interneurals showing), the latter with about 18, 12 interhæmals showing very distinctly.

No. 327 shows 25 vertebræ of the side of the body without head or fins. Neurals and ribs are well shown, with a trace of the spinous dorsal and some small ctenoid scales, perhaps belonging to some other fish.

No. 316 represents a section of the vertebral column, with 22 vertebræ, these short, quadrate, with three strong ridges (grooves) on the side, a characteristic of THYRSOCLES. The long interneurals and many ribs are preserved, but not the head or fins.

No. 29. Vertebræ quadrate, with deep grooves; first dorsal mostly lost; second very perfect, with long, straight interneurals, about 23 rays; 22 long, straight interhæmals; ribs very short and oblique; interneurals and interhæmals much larger than in TURIO.

7A. **Thyrsocles escharion** Jordan, new species.

(No plate)

About half our specimens of Thyrsocles (280, 15, 20) differ from the type in the relatively shorter interhæmal bones, which become rapidly shortened from the first, the eighth being not more than half the first, which is 2½ to 2⅓ in depth of the body at the front of anal, this depth being equal to the length of eleven or twelve vertebræ, the body being rather deeper than in T. KRIEGERI.

In T. KRIEGERI (303, 306, 51) the interhæmals are much longer and nearly equal in length, the eighth being nearly as long as the first and about half depth of body at front of anal, this depth equal to length of nine vertebræ.

The type specimen (No. 280) of this fine species, 15 inches in length, shows fairly well all parts behind the head.

Vertebræ $22 + 25 = 47$, short, subequal, quadrate, little constricted about as deep as long, each with three ridges and grooves along its side. Body fairly robust, depth 4⅔ in body (from gill opening to base of caudal). Caudal peduncle slender, about 2½ in greatest depth.

Pectoral rays about 16, the fin rather broad, the lower rays shortened; ventrals mostly obliterated, apparently just behind pectorals; first dorsal mostly obliterated, the spines slender, close-set, inserted before pectorals, the interneurals weak, about 10 spines traceable at the bases; interspace between dorsals considerable; soft dorsal with rather long and strong interneurals, nearly straight, the fin broken; interneurals 16; the fin rays at least as many, probably about 20, the last rays and interneurals obliterated; anal with long, strong interhæmals, the anterior ones very oblique, and all parallel, making a conspicuous grate-like appearance. Insertion of fin rather behind middle of second dorsal; the fin rather high, apparently falcate, of about 20 rays; caudal widely forked, of about 20 rays on each side. The lobes ⅕ more than greatest depth of body. In this specimen the axis of each vertebral centrum is turned forward above, and the interhæmals are shorter than in 303 and 306 and shorter than in the type of T. KRIEGERI.

No trace of finlets or of scales preserved.

It is evident that this species cannot be placed in the genus THYRSITES, the form of the first dorsal and pectoral being quite different, the caudal fin being much stronger.

(ἐσχαϱίον, a small grate, or gridiron.)

Side of a large example (No. 12), 20 inches long in life, the fragment 12 inches without head or tail, but showing the strong quadrate vertebræ, as deep as long, with the dorsals and anal fin; distance from front of first dorsal to front of anal ⅕ more than depth of body below second dorsal. First dorsal of 15 to 20 slender spines, the count not exact; soft dorsal falcate, with 17 rays evident and probably 4 or 5 more lost, there being 21 interneurals corresponding to rays. Anal rays not to be counted, probably about 25, the first interhæmals very oblique, curved backwards, the others long and parallel; first interhæmal inserted nearly under front of soft dorsal, the first anal ray nearly under middle of dorsal fin; vertebræ strong, sub-quadrangular, deeper than long, each with two strong lateral ridges, between 45 and 50 in all, but some at both ends broken, about 12 having interhæmals along base of anal fin. The caudal vertebræ (16 preserved) must have been about 24.

No. 23 is a fragment about 10 inches long of a large fish, with quadrate vertebræ, each three-ridged, along the side. The head and tail are wanting.

The pectoral fin shows twelve or more rays. The soft dorsal shows about 14 interneurals and a few anal rays show.

Another specimen (in duplicate, 69A and 69B) seems to belong to THYRSOCLES ESCHARION. It shows the anterior region, a head wholly crushed, with twelve vertebræ, short and quadrate. A few dorsal spines may be traced. The posterior part of the head is relatively short, a character which, with the numerous vertebræ, will distinguish the species from TURIO.

No. 15. Body with tail, well preserved; interhæmals relatively short; vertebral axis turned forward above. A typical example, much like No. 280.

12B. Posterior region showing well, 20 dorsal rays, and anal rays 24. Interneurals and interhæmals typical.

No. 318. The tail of a fairly large fish, the caudal itself entirely crushed and displaced. It shows 19 vertebræ, each quadrate, deeper than long, with three longitudinal ridges and grooves, the neural and hæmal spines rapidly shortened behind.

For purposes of comparison we add the following notes on living species:

SCOMBEROMORUS MACULATUS (Mitchill). Vertebræ 47, rather deeper than long, moderately grooved. Interhæmals 15, short, straight, parallel, close-set, a little more than ⅓ depth of body above anal fin. Tail with neural spines; teeth, 12 + 12 in each jaw, wide-set, compressed, those in front smaller but not crowded. Maxillary half head or a bit more. Postorbital part of head a little shorter than eye and snout; opercle very short, 2¼ in postorbital part of head. Dorsal spines slender, low, well spaced. Second dorsal inserted nearer opercle than caudal.

This species is closely related to SCOMBEROMORUS REGALIS (Bloch) = S. PLUMIERI Lacépède, the type of the genus SCOMBEROMORUS of which (Lacépède), type of CYBIUM from the Philippines, is an exact synonym. SCOMBEROMORUS COMMERSONI has the interhæmals strong, straight, parallel, ⅓ depth of body; teeth on each side 12, subequal, much compressed. SCOMBEROMORUS CAVALLA (Cuvier and Valenciennes), the big kingfish of the Florida Keys, has the interhæmals similar but shorter, ¼ depth of body; teeth 12 on each side, much compressed, subequal.

Family **ZAPHLEGIDÆ**

Zaphleges Jordan, new genus.

(Type ZAPHLEGES LONGURIO Jordan.)

Body elongate, symmetrically formed, much as in SPHYRÆNA; head moderately elongate; mouth large; teeth rather small, slender, conical, pointed, somewhat spaced, about 60 on the side of the lower jaw; teeth in upper jaw and roof of mouth obliterated; no evidence of canines; vertebræ small, slender, longer than deep, about 54 in number; interneurals strong; interhæmals obliterated; dorsal fins separate, the first not far behind head, of about 9 slender spines; soft dorsal rather long, not elevated; anal apparently similar, inserted behind its front, with two slender spines; pectorals moderate, inserted opposite middle of opercle; ventrals directly below pectorals; their rays apparently I, 5; caudal fin large, well forked, with short, strong basal rays like fulcra; scales cycloid, of moderate size, the number probably about 60, but no accurate count possible.

This genus resembles the section of elongate APOGONIDÆ, DINOLESTES, SCOMBROPS, and TELESCOPIAS. But, with many vertebræ, it has no near affinity to any of these, and the teeth, so far as preserved, are small and equal. The resemblances to the herring on the one hand and to the mackerels on the other are fallacious. From ATHERINIDÆ and SPHYRÆNIDÆ it differs in the strictly thoracic ventrals. Its vertebræ are much more numerous than in any of these forms. (Ζαφλέγης, full of fire, vigorous.)

9. **Zaphleges longurio** Jordan, new species.

(Plate XIII)

Type No. 100, a very fine example, 18½ inches long, showing the entire fish, the head crushed, the first dorsal, ventrals, anal, and ribs injured.

Head 3½ in length to base of caudal; depth 6¼; head moderate, rather pointed; half of lower jaw preserved; this with about 60 slender, pointed teeth apparently in one row, rather small anteriorly; no trace of canines; part of gill arches with fringes preserved; bones of head apparently all entire.

First dorsal inserted not far behind head, somewhat displaced in the type; 8 or 9 slender, low, close-set spines preserved; one or two longer detached spines preserved behind it, these probably not belonging to this fish. Soft dorsal of about 25 slender rays, the anterior longest; anal fin detached, partly obliterated, the interhæmals all lost; first two rays apparently short, slender spines; about 12 rays preserved, its insertion behind front of soft dorsal; caudal fin very long and strong, well forked, its lobes equal, exceeding depth of body, outer rays much shorter, like fulcra, the number 9, 10 — 10, 9, the peduncle not very slender, with strong neural and hæmal spines on each vertebra. Pectoral fin inserted opposite curve of opercle, rather broad and shortish, of 16 to 18 rays, the fin not symmetrical, the lower rays rapidly shortened. Ventrals inserted just below pectorals, largely obliterated.

Vertebræ about 54, slender, constricted, longer than deep; the neural and hæmal spines rather strong; ribs lost; interneurals of soft dorsal long, rather strong, and very oblique.

Scales preserved in various parts of the body, rather small, cycloid (apparently about 60 in a row).

Note on Zelosis Jordan and Gilbert, new genus: Type Clupea hadleyi Jordan and Gilbert (Fossil Fishes of Southern California, p. 29). The fish described by us a Clupea hadleyi is certainly not a true herring, and it bears a striking resemblance to Zaphleges longurio in its general form, squamation, vertebral column, and rudimentary caudal rays. But its ventral fins are plainly abdominal (not clearly shown in the plate), there is no trace of spinous dorsal, the caudal fin is much smaller with much shorter caudal peduncle. The dorsal and anal fins are far back and opposite each other as shown by the interspinals. It may be made type of a genus Zelosis (Ζελόσις, imitation).

(Plate XXIX)

Family **ZAPRORIDÆ** (?)

Aræosteus Jordan and Gilbert, new genus.

(Type: ARÆOSTEUS ROTHI Jordan and Gilbert.)

Body elongate, rather robust. Head unknown, the bones striate; vertebræ about 43, slender, hour-glass shaped, not grooved. Interneurals and interhæmals moderate, very oblique; dorsal fin of 30 to 40 rays, all simple and flexible, subequal, the fin continuous; anal with about 15 rays all simple; other fins lost.

The location of this genus is uncertain. In its vertebral column it resembles some COTTIDÆ. The dorsal fin has analogies among the dolphin-like fishes and among the allies of the blennies. But on the whole the long series of simple rays suggests most strongly the Pacific Coast genus, ZAPRORA Jordan. Nothing, however, is known of the vertebral column of the very rare type of that genus, ZAPRORA SILENUS Jordan, thus far found only about Vancouver Island. The affinities of ZAPRORA are not yet determined.

On the whole, it seems safest to assume that ARÆOSTEUS is an ally of ZAPRORA, which is probably a last relic of a disappearing group.

(Αραιός, slender; όστέον, bone.)

10. **Aræosteus rothi** Jordan and Gilbert, new genus and species.

(Plate XIV)

Type No. 315. Part of a fish 10 inches long to end of anal, the head crushed, showing strong striæ on opercles. Head 3½ to end of anal; depth 4½; vertebræ slender, not grooved, hour-glass shaped, 10 + (7) + 13 to middle of anal, probably about 43 in all. First dorsal of 15 to 20 slender spines, rather wide set. Second with 15 to 20 slender rays, apparently simple, no sign of branching anywhere. No evidence that the spines and soft rays are differentiated. The last rays certainly and perhaps some intervening spines are lost. The fin was most likely continuous. Interneurals moderate, oblique, in pairs. Interhæmals very oblique, rather strong, the fin inserted far behind front of soft dorsal. Anal showing about 15 rays, all simple. Some or all of interhæmals and interneurals in pairs, two springing from one neural or one hæmal, one or often two between each two interhæmals and interneurals, mostly longer than the hæmals and neurals; ribs slender, very oblique.

This seems to be the same as No. XI, from Lompoc, an indetermined specimen figured in our *Fossil Fishes of Southern California*. (Named for Almon Edward Roth of Stanford University.)

Family **SERRANIDÆ.**

Emmachære Jordan and Gilbert.

(Type: EMMACHÆRE RHACHITES Jordan and Gilbert.)

Allied to STEREOLEPIS Ayres, but with stronger dorsal spines. Body robust, the depth about equal to length of head, nearly three times in length to base of caudal; caudal region tapering rather rapidly. Mouth large, the lower jaw projecting, the teeth bluntish, in broad bands, no serrations or spines on head as far as known. Vertebræ 24, strong, about as deep as long, strongly grooved; spinal bones, strong and with interneurals dagger-shaped (dilated at base). Dorsal rays X, I, 16, the fin deeply notched, the spines very strong, the median longest, 2½ in head; soft dorsal with its base about equal to that of the spinous part, its base nearly horizontal, the rays about as long as the spines. Anal III, 8 or 9, the second spine strongest, but not longer than third. Caudal broad, subtruncate, with large hypurals and no median split. Ventrals I, 5 inserted just before pectorals; pectoral broad and rounded, unsymmetrical. The broken specimen on which this genus was based (1919) is now supplemented by two large examples.

11. **Emmachære rhachites** Jordan and Gilbert.

(Plates XV, XVI)

Our best example (No. 220) is 19½ inches long; complete except for the crushed head. Head 3⅕ in length; depth about the same; form robust, tapering posteriorly. Vertebræ 9 + 15 = 24, rather strong, about as deep as long, somewhat constricted, with a strong double groove on the lower side of each; neurals and hæmals strong, even; interneurals of spinous dorsal almost as long as neurals, dagger-shaped, one between each pair of neurals, dilated at base, those of soft dorsal much smaller, also shorter, mostly two between each pair of neurals; interhæmals strong, the anterior very long, dagger-shaped, the second somewhat enlarged, one between each pair of hæmals; ribs small.

Lower jaw strong, apparently projecting, 2⅔ in head, with moderate rather broad bands of teeth preserved; sides of head with imprints of rather large scales. Dorsal fin continuous, deeply notched, the first of 10 strong spines, the median longest, about 2½ in head. Soft dorsal with its base scarcely longer than that of the spinous part, with a slender spine and 15 or 16 soft rays, its base nearly horizontal, the rays about as long as the spines. Anal inserted slightly behind soft dorsal, its three spines strong, the second strongest, about as long as third. Spines graduated, the rays about III, 8 or 9; base of anal somewhat shorter than that of soft dorsal. Caudal broad, not forked, apparently subtruncate; hypurals broad, without open median space behind. Ventrals I, 5, inserted just before pectorals, the fin well developed. Pectoral rays about 16, the fin broad and rounded, a little more than half head, unsymmetrical, the upper rays longest.

A second specimen (No. 311) shows the side of a large fish, the part preserved 17 inches long, head crushed. Vertebræ about 24, strong, constricted and grooved. Anterior neurals very strong. Dorsal deeply notched, apparently X, I, 15, the spines very strong, the longest 2⅛ in depth; a strong imprint marks the second spine, much stouter, though shorter, than third, with long, stout, dagger-shaped interneurals dilated at base; soft rays lower, but high. Second dorsal spine twice height of last. Anal probably about III, 10, the spines broken. Soft dorsal interneurals mostly double. Body formed like a large bass. Depth a little more than length of spinous dorsal. Soft dorsal and anal with the base nearly horizontal, not set obliquely as in Banjos and Hapalogenys.

This fish must belong to the Serranidæ, though having stronger dorsal spines than any living species. It may be nearest Stereolepis, the giant bass or Jewfish of Japan and California, but the spines are stronger and the anal fin longer than in that genus, the ventrals farther forward.

Family SPARIDÆ.

Rhythmias Jordan and Gilbert, new genus.

(Type: Rhythmias starrii Jordan and Gilbert.)

A genus of Sparidæ, having the broad-elliptical form of the living genus Lagodon. Head rather large, obtuse, the upper profile evenly curved, its length nearly 3 in body; depth about 2½. Mouth and teeth unknown; bones of head apparently without spines or serrations. Vertebræ about 25, small, longer than broad, the spines even; interneurals short and slender, dilated at base, one or sometimes two between each pair of neurals; second interhæmal somewhat enlarged.

Dorsal fin low, continuous, scarcely notched, the rays about XIII, 12 or 13; no antrorse spine before first spine; middle spines highest; anal rays about III, 8, the second spine strong and curved, higher than third or than the soft rays; pectorals narrow; ventrals thoracic, inserted just behind pectorals. Caudal I, 5, forked, the lobes very long. Scales unknown.

This genus is no doubt an ally of Sparus, but its exact position cannot be determined until the teeth can be examined. The caudal fin is larger than in any living sparoid fish. (ϱῦθμη, symmetry).

12. **Rhythmias starrii** Jordan and Gilbert, new species.

(Plate XVII)

The type (No. 175), 7½ inches long, shows the whole fish, the head, however, badly damaged and the fins imperfect.

Head rather large and blunt, 2⅘ in length to base of caudal; depth 2⅖; upper profile forming an even curve from snout to caudal; snout rather blunt; mouth broken, apparently small; eye moderate, as long as snout and apparently 4 in head; no spines on head; vertebræ 10 + 15 = 25, small, longer than broad, with two narrow grooves, neural and hæmal spines moderate, directed evenly upward and backward; interneurals slender, dilated at base; second interhæmal enlarged. Dorsal fin low, continuous, scarcely notched, the spines XIII, the middle ones a little the highest; the first dorsal spine over second vertebra, the rays not to be counted. Anal low, with the second spine strong, curved, apparently higher than any soft rays; pectoral obliterated; ventrals displaced, apparently I, 5; caudal injured, its outline apparently lunate; no scales preserved.

The species is named for Mr. Edward B. Starr of the Celite Products Company of Lompoc.

A similar specimen is No. 43, 10 inches long, 12½ in life, the side of a large porgy, without head. Depth 2¾ in body from gill opening to base of caudal about as long as deep, each with a conspicuous median groove (ridge): 10 + 15 = 25 (probably 24) preserved; neurals slender, similar to the hæmals; interneurals small, those posteriorly double or divided.

Dorsal fin continuous, somewhat notched, 10 rather slender spines present, the fourth longest, about 3⅛ in depth of body; soft dorsal apparently short, its rays obliterated; probably not over 10 in number.

Anal with three spines, the second and third about equal, the rays apparently not more than 8; second interhæmal a little enlarged, rather longer than its spine, which is shorter than longest dorsal spine and 3¾ in body. Caudal very long, forked, its lobes 1½ in depth of body. Ventrals just behind pectorals, I, 5, well developed; pectorals rather narrow, crushed.

This specimen seems to have the dorsal spines rather higher than in the type, and the anal spine smaller. This difference may be due to imperfections in preservation.

Another (22A) is in poor condition, 13 inches long. Interneurals small, oblique, those of first dorsal moderate, one for each pair of neurals, each vertebra with two narrow ridges and three grooves. Vertebræ 24, strongly grooved. Dorsal with 10 to 12 low spines preserved, and 15 to 20 low soft rays. Anal about III, 18, the second spine longest but still short; caudal long, subtruncate. Spinous dorsal with rather long and strong interneurals. Second dorsal with interneurals short and weak. Ventrals well developed, with a strong spine, inserted well behind pectorals, but attached to a very strong and long pelvic bone. Pectorals moderate. Head obliterated.

Five more specimens, since examined, are without antrorse dorsal spine, the sole character by which PLECTRITES can be separated from RHYTHMIAS. But in no case are we sure that it was actually absent.

Plectrites Jordan, new genus.

(Type: PLECTRITES CLASSENI Jordan).

Spariform fishes with a sharp horizontal spur directed forward, at the base of the first dorsal spine. Body elliptical, compressed, rather deep. Head not preserved, the depth of body about 3½ in length to base of caudal. Vertebræ about 30, deeper than long, slightly grooved, neural strong; interneurals straight, not expanded at base, those in front well separated, two or three for each pair of neurals; those under soft dorsal short, close-set, parallel, two or three for each pair of neurals; interhæmals all short and weak.

Dorsal continuous, scarcely notched; the rays low, D. XII, I, 11. Anal opposite soft dorsal. Other fins lost.

13. **Plectrites classeni** Jordan, new species.

(Plate XVIII)

Type No. 313, part of side of fish, 8½ inches long. Body regularly elliptical, compressed, deepest mesially. Depth about 3½; head lost, vertebræ about 25, deeper than long, slightly grooved; neurals rather strong, interneurals straight, not expanded at base, those in front well separated, those under second dorsal close together, short and parallel.

Dorsal with a sharp antrorse spine at base of first spine and almost as long. It is attached at the base of the first spine and to the same interneural. Dorsal spines thirteen. The first spine ¼ length of fourth, the rest shortened behind, connected closely with second dorsal, which is low, even, with slender rays. D. XII, I, 11.

Anal opposite soft dorsal, its interhæmals all short and weak: ventrals and pectorals lost; a few moderate scales. This fish has the dorsal fin and its antrorse spine much as in the SPAROID genera, STENOTOMUS (STENESTHES) and LAGODON. The presence of this spine with a rather more elongate body alone separates this genus from RHYTHMIAS. The antrorse dorsal spine is found also in AMBASSIS, SCATOPHAGUS, ACANTHURUS and SIGANUS, but the present genus is evidently sparoid.

The species is named for its discoverer, Mr. WILLARD J. CLASSEN of Stanford University.

Family **SCIÆNIDÆ.**

14. **Lompoquia retropes** Jordan and Gilbert.

(Plate XIX.)

Only the original type yet found. The body is largely covered with small, thin scales, smaller below. Vertebræ 14 + 10, as in CYNOSCION, its nearest living relative.

Lompochites Jordan, new genus.

(Type: LOMPOCHITES HOPKINSI Jordan.)

A long and slender fish, apparently belonging to the SCIÆNIDÆ, but quite as likely a CARANGOID. Head about 4 in length, the depth 4½; mouth rather large, the teeth unknown. Vertebræ 14+10=24, little constricted and with a broad ridge between two grooves. Neurals and hæmals slender; interneurals slender and sharp, one for each neural anteriorly, two between each pair posteriorly, these shorter and more oblique, interhæmals stronger, forked, one for each pair of hæmals.

Dorsal fins separated; the rays about XII, 20, the first short, the second long and low. Anal apparently II, 18; ventrals inserted well behind pectoral, much as in LOMPOQUIA. Caudal lost; no scales preserved.

15. **Lompochites hopkinsi** Jordan, new species.

Type No. 101, a shadowy impression of a large fish, complete but very faint, ten inches long to base of caudal. A long, slender fish, the head 4⅙ in length; depth 4½; the head rather long and low, the mouth apparently rather large, the maxillary perhaps reaching front of eye; bones of head obscure, except that one gill arch is uncovered showing the prints of its fringes; vertebræ longer than deep, 10 + 14, little constricted; with a broad rounded median ridge between two grooves, not showing the two narrow ridges and three grooves so evident in the type of LOMPOQUIA RETROPES.

Neural and hæmal spines slender, even; ribs evident; dorsal apparently divided, the first dorsal short, of 10 to 12 slender spines; soft dorsal long and low, of 15 to 20 slender rays; first dorsal inserted behind ventrals over the fifth vertebra, its interneurals springing from the third; anal apparently with two small spines and about 18 rays; caudal lost;

pectoral mostly obliterated; ventrals inserted well behind it, just before first dorsal spine with a long pelvic bone, much as in LOMPOQUIA RETROPES.

A renewed study indicates that LOMPOCHITES may be one of the CARANGIDÆ; perhaps nearest ELAGATIS.

Named for Mr. Timothy Hopkins, founder of the Hopkins Marine Station.

Family SCORPÆNIDÆ.

Rixator Jordan and Gilbert, new genus.

(Type: RIXATOR PORTEOUSI Jordan and Gilbert.)

The species described below as RIXATOR PORTEOUSI would certainly come under the head of SEBASTODES as defined by Jordan and Evermann. But that genus covers a great variety of forms and must be subdivided, and the present species is allied to the type-group.

The following generic characters are shown by R. PORTEOUSI: Body rather elongate, compressed, the back straight, scarcely arched, with a very large head, 3 in length, the depth about 4¼; mouth large, the cleft extending beyond eye; larger than in SEBASTOSOMUS and ROSICOLA; lower jaw prominent, with bands of even, pointed teeth.

Vertebræ 24 (25), large, mostly longer than deep, strongly grooved; neurals and hæmals strong; interneurals long and strong, expanded or dagger-shaped at base, especially anteriorly, one and sometimes two posteriorly between each pair of neurals. Interhæmals small, slender, and very oblique except the second, which is robust and very long, half head; two or three set irregularly between each pair of hæmals. Dorsal continuous, deeply notched, its rays XII, I, 13. Anal rays III, 6, or possibly 7, the second spine very long and strong. Pectorals broad, rounded, unsymmetrical. Caudal broad, subtruncate, the hypural plates large, about two on a side, with an open median split which separates the caudal rays in the skeleton.

Cranium unknown; armature of head and squamation of body, with character of gill rakers, undetermined. Among living forms the species in question is certainly nearest typical SEBASTODES, but the second anal spine and its interhæmal are greatly enlarged.

In SEBASTODES proper the cranial ridges are very small, mostly without spines at tip, the jaws unequal; the cranium thick, very broad between the eyes, somewhat convex; scales moderate; gill rakers long and slender. Vertebræ 24, besides the small vertebra which forms the base of the expanded hypural; the vertebræ, especially the mesial ones, notably longer than deep; parietal bones not meeting. Anal inserted under middle of soft dorsal, its rays II, 9 to III, 12. In SEBASTODES the anal spines are quite small, with small second interhæmal, and the anal fin has more rays than in related forms.

This genus, RIXATOR (no cranial characters being available) seems to differ from ROSICOLA Jordan and Evermann in the very long second anal spine and weaker skeleton. From the less nearly related SEBASTOMUS Gill (ROSACEUS), with which it agrees in these regards, it is separated by the smaller number of vertebræ, 24 (25) instead of 27. Those who choose may regard ROSICOLA and RIXATOR alike as sections of SEBASTODES.

The genus RHOMARCHUS (ENSIGER), described by us in 1919, seems related rather to SCORPÆNA than to these SEBASTINE forms. It has much stronger dorsal spines and the second anal spine still longer. The count of 18 vertebræ in the type is evidently an error, some six of the body vertebræ being crushed.

The group of Rock-fish or Rock Cod (SEBASTINÆ), allies of the Rose-fish (SEBASTES MARINUS) of the Atlantic, forms a most conspicuous feature of the living fish fauna of both shores of the North Pacific. About fifty-three species are known from the American shores and twenty-two others from Japan.

These fish differ enormously among themselves, especially in cranial characters; but these features are subject to a variety of intergradations defying all attempts at sharp division. All possess thirteen dorsal spines, three anal spines, a broad, divided hypural plate, and small rough scales. These facts have led Jordan and his associates, Gilbert, Evermann, and Cramer, to refer the whole assemblage to the single genus SEBASTODES, characterized by the presence of 13 dorsal spines and 27 vertebræ. Meanwhile these authors have recognized the groups defined by Gill and by Eigenmann as subgenera.

A recent study of these fishes made by Dr. Jordan at Monterey inclines him toward a revival of some of these suppressed genera, especially of the groups called SEBASTODES, ROSICOLA, SEBASTOSOMUS, SEBASTOMUS, HISPANISCUS, PTEROPODUS and SEBASTICHTHYS.

The number of vertebræ is not uniformly 27 as supposed. In most of the species, but not in all, the number is 27, counting the smaller one, which forms the base of the hypural plate. He finds 27 (26 + 1) vertebræ in SEBASTOSOMUS (MYSTINUS, FLAVIDUS) in PTEROPODUS (VEXILLARIS, ATROVIRENS, NEBULOSUS, CARNATUS and CHRYSOMELAS), as well as in SEBASTOMUS (ROSACEUS and CONSTELLATUS).

But in the species called SEBASTODES (PAUCISPINIS, GOODEI) and ROSICOLA (PINNIGER, MINIATUS) the vertebræ number but 25, including the hypural one. The elongate form of the body, the low, straight outline of the back, with the great size of the mouth, the small anal spine, besides the almost spineless cranium, sufficiently define SEBASTODES.

16. **Rixator porteousi** Jordan and Gilbert, new species.

(Plates XXI, XXII, XXIII)

Type No. 300. A complete large fish with crushed head, 18 inches long. Head very large, about 3 in length, depth about 4¼; maxillary 1½ in head, extending to just beyond eye; orbit 3¾ in head; snout about 3¾; jaws unequal, the lower prominent, both with small, even, close-set conical teeth, as far as shown. Form relatively elongate, the outline of the back straight, scarcely arched.

Vertebræ 10 + 15 = 25, rather large anteriorly, as deep as long, posteriorly longer, grooved; neurals and hæmals strong, even; interneurals strong, all more or less dagger-shaped, expanded at base, extending half way or more to backbone.

Interhæmals much smaller, slender and very oblique, reaching about one-third distance to backbone, the second interneural excepted, which is robust and very long, very oblique, about half length of head, and equal to depth of body at insertion of anal, D. XII, I, 13, A. III, 7, or possibly 6. Dorsal continuous, deeply notched, with 12 strong spines in its first part, the third spine longest, 2⅛ in depth of body, the first spine very short. Second dorsal I, 13, the rays high, subequal, about as high as longest spines, the second strongest, longer than third, 2 in depth of body (broken in type), first spine more than half second, the fin inserted farther back than in related species, nearly under middle of soft dorsal, about as in SEBASTODES.

Pectorals broad, rounded, very long, unsymmetrical, of about 18 rays, 7¼ in length of body, nearly ⅘ of head, almost as long as in ROSICOLA PINNIGER; ventrals lost; caudal broken, subtruncate, rounded, split mesially, with strong hypurals, about 3 on each side, of about 24 rays, the outer shortened; soft rays of all fins much branched. No bones of head with serrate edges. No trace of scales. This species is apparently nearest the living SEBASTODES GOODEI Eigenmann. It differs from those called ROSICOLA (PINNIGER, MINIATUS) in the larger mouth, straighter back, longer vertebræ and most posterior position of the anal fin.

To RIXATOR PORTEOUSI we refer two smaller examples, which differ from the type only in the very slender interneurals; a matter probably of age.

No. 243 is a small fish, lacking the head, the part preserved 5 inches long, of depth of about 4½ in length from front of spinous dorsal. Vertebræ 10 (7 preserved) + 14 or 15 = 25, slightly longer than broad, especially posteriorly; each vertebra somewhat grooved; neurals and hæmals moderate; interneurals straight, simple, distinctly expanded at base; interhæmals small, except the second, which is much enlarged, bearing the very long, curved second anal spine, the length of which is greater than depth of body above it.

Head large; body oblong; the back scarcely elevated; mouth rather large, with sharp, even teeth; vertebræ 24 or 25, small, deeper than long, each with a median groove; neural and hæmal spines moderate; interneurals simple, straight, not much dilated, those under soft dorsal smaller; interhæmals, except the second, weak, oblique. Dorsal continuous, rather low, deeply notched, the rays about XII, I, 13. The spines strong, the longest spine not longer than those next to it, and not double length of next-to-last spine; last spine as long as soft rays, which taper rapidly backward. Dorsal apparently XII, I, 3 or 4, I, 14; the soft rays not to be counted; anal rays III, 7, the number uncertain. Caudal not forked; ventrals and pectorals detached and broken.

No. 246. Body with broken head, 9 inches long. Vertebræ apparently 25; depth about 5; head about 3¼ in length, bones all entire, neurals and hæmals meeting them at an angle, and mostly not so long. Second interhæmals very long and strong; interneurals all simple, not at all expanded at base, those behind quite slender. Dorsal spines XIII, the first small one, third highest 1⅝ in depth; fin notched, the rays XII, I, 13 or 14. Anal mostly lost, its second spine enlarged, its oblique interhæmal ¾ depth of body. Caudal truncate, mesially divided, the number of soft rays about 16. This specimen is finely preserved.

17. **Rixator ineziæ** Jordan, new species.

(Plate XXII, fig. 2)

Some of our specimens of RIXATOR seem to differ from the type. In R. PORTEOUSI, the anal, as in SEBASTODES, is inserted posteriorly, its first spine about under middle of soft dorsal, the second spine usually extending beyond the soft dorsal rays; the body is slender, the depth at front of anal about equal to longest dorsal spine. In the other form, which I may call RIXATOR INEZIÆ, the anal is inserted about under front of soft dorsal, as in nearly all the other SEBASTINE fishes, its long spine not extending beyond dorsal, and the depth of body at front of anal more than longest dorsal spine, these spines rather higher than in R. PORTEOUSI.

Type No. 45B, 7½ inches long, the body without head, the whole fish about 9 inches, the counterpart, 45A, similar but fractured. Depth 1⅛ in distance from front of anal to caudal; about 3⅗ in distance from snout to base of caudal. Vertebræ $10 + 14 = 24$, constricted, about as deep as long, with a median groove; neural and hæmal spines moderate, straight; interneurals simple, slender, but apparently expanded at base.

Dorsal fin continuous, XII, I, 14, deeply notched, the spines high, slender, stiff; 13 present (12 in the duplicate), these much higher than the soft rays, which number about 14, and nearly equal to depth of body. The anterior soft rays are high, the posterior rather rapidly shortened; anal with the second interhæmal very strong, more than half depth of body, supporting the very strong curved second spine, which is twice the first spine and longer than the third, ⅗ depth of body, as long as dorsal spines. Seven soft rays preserved, these rapidly shortened behind; pectorals very broad, of about twenty rays, broken behind; ventrals just below them, apparently I, 5. Caudal fin large, subtruncate; hypural rather broad; no trace of scales.

No. 341, whole small fish with broken head, 7¼ inches. Vertebræ 24, a little longer than deep, each with 3 grooves; caudal lost, ventrals I, 5, under broad pectorals. D. XII, I, 12 or 13, an accurate count. A. III, about 8. Dorsal spines high. Second anal spine large, with strong interhæmal.

No. 76. Fragment, showing some dorsal spines and large anal spine.

No. 310. Pectoral and ventral fins of a large fish.

No. 323. Eight spines of the first dorsal, with a few vertebræ.

No. 141. The head and part of the body 7 inches long, preserved in counterpart, the total length about 10 inches; seems to belong to RIXATOR INEZIÆ.

Head large, as long as body from gill opening to front of anal fin; jaws long, apparently subequal, armed with small, sharp, even teeth. Maxillary about reaching front of eye, and apparently 3 in head; preopercle apparently entire; opercle large, nearly smooth, without evident spine; upper part of head crushed; greatest depth of body 1¾ in length of head.

Body vertebræ 14 to front of soft anal; 7 present behind these; 3 or 4 lost, the actual number probably $10 + 14$ or $15 = 25$; vertebræ small, deeper than long, each with a median groove with moderate neural and hæmal spines; ribs rather short; interneurals simple, straight, directed slightly backward and with a thin wing; those of soft dorsal smaller, scarcely winged or "dagger-shaped"; interhæmals weak. Dorsal fin deeply notched, XIII, I, 13, but continuous, the anterior part of 12 spines, the third being longest, 2¼ in head; last spine a little longer than first, 4⅔ in head; first dorsal spine close behind head, attached to first interneural. First ray of second dorsal a slender spine, 2¾ in head; the first soft ray high, the others progressively shorter to the last, which is not ¼ the longest; anal inserted behind soft dorsal, its rays damaged; the spines lost, although a trace of a strong interhæmal is present, with a mark below it, a trace perhaps of the second spine. Pectoral very broad, the rays 15 or more, the fin 2⅗ in head; ventral fins lost. Some traces of small scales on side of head.

Family **HEXAGRAMMIDÆ.**

18. **Hexagrammos achrestus** Jordan and Gilbert.

(Plate XIX)

The original type of this species is from Lompoc. The block on which it occurs was unfortunately cut in two just before the middle of the body. The parts remaining agree with the genus HEXAGRAMMOS.

Another block (No. 301), with counterpart, was also secured. This represents 10 inches taken from a larger fish, and further forward, the species apparently the same; the only difference we notice is that in the type of H. ACHRESTUS the slender interneurals are thrust between the neurals, while in the present specimen they meet nearly tip to tip. This is probably due to the fact that No. 301 shows the spinous dorsal fin, while the type (No. CXL) shows mainly the soft dorsal.

In No. 301 the head is crushed; the pectoral rounded, very wide, with about 18 rays, scarcely procurrent below. Vertebræ very large, deeply grooved, deeper than long; 16 shown, the pectoral reaching eighth; neurals simple, strong, slightly longer than interneurals, which are simple, straight, sharp, and well spaced, one interneural for each neural and meeting its neural squarely. Dorsal spines beginning over opercle, moderate, slender, well spaced, 16 of them apparent. Opercles apparently entire. Total number of vertebræ probably about 45 to 50. In living species of HEXAGRAMMOS (DECAGRAMMUS, SUPERCILIOSUS) there are 50 to 52.

Family **OPHIODONTIDÆ.**

19. **Ozymandias gilberti** Jordan.

(Plate XXIV)

No. 332 is part of the large fish supposed to be OZYMANDIAS GILBERTI Jordan (*Fossil Fishes of Southern California*, p. 44, pl. XXI). It consists of a fragment, 8½ inches long, with 12 large quadrate vertebræ from near the head, with their appendages. Vertebræ without ridges or grooves on the side, the median portion on each side a little prominent. The neurals are strong, directed well backward, well separated, with two dagger-shaped interneurals between each pair below first dorsal; these corresponded to a long first dorsal fin of a dozen rays or more; ribs well separated, very strong, curved strongly backward, each as long as six vertebræ. Body of even depth, the dorsal and ventral outlines seeming straight.

A broad, shortish pectoral fin of 12 to 15 rays detached from body, on side of belly.

It is not certain that this specimen belongs to OZYMANDIAS, nor is it clear in what family it should be placed. The vertebræ and interneural structures agree very closely with those of the living genus OPHIODON Girard (O. ELONGATUS), which now inhabits California waters. This is the sole representative of its family among recent fishes.

Family PLEURONECTIDÆ

Evesthes J. Z. Gilbert (1910).

(Type: EVESTHES JORDANI Gilbert.)

A genus of flounders, allied to HIPPOGLOSSINA Steindachner and EOPSETTA Jordan and Goss, with fewer vertebræ than HIPPOGLOSSOIDES and smaller and more oblique mouth.

Eyes normally on the right side; mouth rather large and very oblique; body deep, compressed, the depth about half the length. Vertebræ 32 to 36, three of the anterior ones having very large, expanded neural spines curved forwards; dorsal rays slender, about 65 to 80 in number. Ventral fins far behind eye; hypural plate of many united slender neural and hæmal spines, its disk strongly striate.

20. Evesthes jordani Gilbert.

(Plate XXIV)

A fine example (No. 509), 8½ inches long. Body short and deep, with short body cavity and very large head. Head 2⅗ in length; depth 2 to base of caudal; mouth very large, the jaws equal, straight, the maxillary 1⅓ in head; lower jaw with strong, sharp teeth subequal, well spaced, seemingly in a single row. Vertebræ rather small, more elongate posteriorly, the number $10 + 22 = 32$; hypural plate strong; anterior neurals directed somewhat forward; posterior more backward; interhæmals all double, about as long as hæmals, two to each hæmal spine, and attached to its tip. Vertebral column anteriorly bowed downward, more than in type of E. JORDANI. Interhæmals slender, two to each neural, as usual among flounders.

Eyes probably on the left side, there being no trace of them in the imprint, which is that of the right side; dorsal fin beginning over the eye, the fin low anteriorly, becoming higher behind. Body region very short, 2½ in head, the anal beginning almost under front.

This specimen is without doubt identical with EVESTHES JORDANI, described some years since, from Lompoc, by Dr. J. Z. Gilbert. The genus EVESTHES, as Mr. C. L. Hubbs has shown, is not far from the living genus HIPPOGLOSSINA Steindachner of tropical America. The downward curving of the anterior vertebræ is characteristic of both.

Another example (No. 220), 7½ inches long, lacking the dorsal region, evidently belongs also to Evesthes jordani. The anal fin is better preserved, having apparently 38 rays, caudal large, rounded, 1⅗ in head, of about eighteen rays. Pectoral inserted high, about 2¼ in head, ventral and scales obliterated.

A well-preserved example, No. 510, is 10½ inches long. In this specimen the three expanded, curved neural spines shown in E. hooveri are plainly evident, though less marked than in the latter species. These show faintly in No. 509, but cannot be made out on the original type.

The vertebral column in No. 510 is not at all decurved anteriorly. Anal rays definitely 42; vertebræ 32. Pectoral rays 16.

The hypural plate in this specimen is strongly striate, made up of many coalescent slender neurals and hæmals. This structure is obliterated in the original type of the species.

Still another example, with head and thoracic region only (No. 296), shows the complete pectoral fin of about 13 rays, 2¼ in head. Eleven dorsal vertebræ well arched. The body cavity very short, 2¼ in head; maxillary half head. The fish was about as large as the others—the part preserved six inches long.

Another specimen (No. 33) shows part of the head with twenty-one vertebræ, the insertion of the anal being about under the tenth, the fins, interneurals and interhæmals being all lost.

No. 276 is a fragment of the same species.

21. **Evesthes hooveri** Jordan, new species.

(Plate XXVI)

Type No. 512, 9¼ inches long, in a fine state of preservation. Body deep, the head 2¾ in length, the depth 1⅔, the anterior profile even. Head blunt, as deep as long; mouth rather large, very oblique, the maxillary extending to below eye, 2⅓ in head, being much shorter than in Evesthes jordani. Orbit about equal to snout, 5 in head; the imprint being on the left side of the fossil, the eye was on the right side of the fish. Interorbital ridge narrow, a somewhat elevated ridge. Vertebral column not bent downward anteriorly, the vertebræ 35 in number. Three of the anterior neural spines much expanded, curved and bent forward, all the others slender, needle-like; interneurals all short, thin, hair-like, placed at angles with the neurals and much more numerous, 2 to 4 in each interspace.

Hæmals much longer than neurals, the first three or four expanded and joined to form a curve or "pelvic bone" about the belly, extending to front of anal; several of those farther back bifurcate, each bearing several fine interhæmals, each with a slender ray; vertebræ smaller behind; no anal spine.

Dorsal rays about 75, the fin low, beginning over the eye; the rays all very slender, the short anterior ones turned forward and inserted much before the enlarged neurals; ribs few, short, hair-like. Anal rays about 57, not certainly counted. Ventrals with about 5 rays, inserted far behind eye, apparently just before pectorals, which are obliterated; caudal peduncle short. Caudal moderate, rounded, the hypural as in EVESTHES, made up of slender coalescent neurals and hæmals, the surface, therefore, strongly striate.

The species is named for Theodore J. Hoover, Professor of Mining in Stanford University.

Zororhombus Jordan, new genus.

(Type: ZORORHOMBUS VELIGER Jordan.)

A near ally of the living genus BOTHUS Rafinesque (RHOMBUS Cuvier), differing in the excessively high dorsal fin and rather more posterior insertion of the ventrals.

Form broadly and regularly elliptical, the depth two-thirds the length to base of caudal; eyes on the left side, mouth large, terminal, with conical teeth. Vertebræ small, deeper than long, 37 in number. Neurals strong, two interneurals, each supporting a ray between each pair; interhæmals similar, the anterior very oblique. Dorsal beginning on head, much elevated posteriorly, the longest rays two-thirds length of head. Dorsal rays about 80; anal about 65; ventral separated from anal and extended along ridge of abdomen, a little in advance of pectorals, the rays 6 or 7. Caudal separate from dorsal and anal, the peduncle short.

(Ζόϱος, clear; ϱόμβος, brill or turbot.)

22. **Zororhombus veliger** Jordan, new species.

(Plate XXVII)

Type No. 230. A flounder, 8½ inches long, fairly perfect. Head 2⅗ in length to base of caudal; depth 1½. Body very deep, broadly elliptical, the dorsal and ventral outlines corresponding. Head large, its outline regular; mouth large, terminal, the lower jaw prominent. The maxillary a little more than half head; jaws with moderate, conical teeth, a few present; opercle moderate, striate. Vertebræ rather small, about $15 + 25 = 37$ in number, rather deeper than long, moderately grooved, each with a strong, straight neural spine, about a fourth of depth of body, and each corresponding to a pair of interneurals of about the same length, each of which in turn supports a dorsal fin ray. Occasionally a third interneural is interspersed. The dorsal fin begins on the head and is greatly elevated posteriorly, but the anterior rays are short, the longest rays 1½ in head, 2⅜ in depth of body, last rays rapidly shortened. Anal quite similar to dorsal, with long interhæmals, one corresponding to each ray and two to each of the strong, long hæmals; posterior part of anal similarly elevated, about 1½ in head. First eight or ten interhæmals shortened and placed very obliquely; ribs almost obliterated. Body cavity very short, 2⅛ in head, the first hæmal and interhæmal enlarged, forming together a sort of curved pelvic bone, bounding the intestinal cavity, as described by Dr. Günther in PSETTA MAXIMA. No anal spine. Dorsal rays about 80 (76 +); anal rays about 65; ventral rays, 6 or 7. Ventral fin small, somewhat in advance of pectorals, well behind eyes, apparently extending along the ridge of the abdomen; well separated from the anal fin; pectoral short, broken, of about 13 rays. Caudal mostly obliterated, the dorsal and anal crowding it closely. Eyes apparently on the left side. Several small patches of cycloid scales preserved, much like those of BOTHUS.

To all appearance this species is an ally of the European brill, BOTHUS RHOMBUS (L), with which it agrees in general form, in number of vertebræ, and in the number of fin rays. It differs, however, notably in the great elevation of the vertical fins. The character of the gill rakers and lateral line cannot be ascertained. We may apparently distinguish the genus ZORORHOMBUS from the European genus BOTHUS Rafinesque (RHOMBUS Cuvier) by the high, sail-like dorsal fin.

No. 21. A flounder, 8½ inches long. Back bone with 36 vertebræ, some lost; dorsal beginning at the head, depth nearly or quite half length at head. Vertebral column bent upward at first; 36 vertebræ present, one or two lost. Dorsal low anteriorly, even, beginning on front of head, much elevated; 26 rays over first 12 vertebræ. Other fins mostly destroyed. Neurals strong; interneurals divided from below for most of their length.

This is evidently same as the type of ZORORHOMBUS VELIGER.

23. Diatomœca zatima Jordan and Gilbert.

(Plate XIX)

The original type of this species, No. 336 (CXXXIII), is a fine specimen from Lompoc, on a slab unfortunately cut off at both ends for commercial purposes. The part preserved is 7 inches long, the whole fish about 14.

There are, in general, two interneurals between each pair of neurals, each interneural corresponding to a fin ray; the same adjustment holds in regard to the anal fin. The vertebræ are very large and strong for a flounder, deeper than long, with a rough surface but not grooved; the neural and hæmal spines are very long and strong; the interneurals very much shorter and weaker than in ZORORHOMBUS.

Family BROTULIDÆ.

24. **Eclipes veternus** Jordan and Gilbert.

(MERRIAMINA ECTENES Jordan and Gilbert.)

A specimen (No. 190) 4 inches long, the head fairly preserved, snout pointed; jaws oblique, straight, the lower probably the longer; eye large, as long as snout, 3½ in head, crossed by a narrow process, the interorbital shelf; maxillary more than half head, reaching beyond the middle of eye; bones of head entire; head almost exactly that of the specimen figured by us as ECLIPES VETERNUS; vertebræ about 34, with a few lost, probably about 40 in all, rather slender, hour-glass shaped, those posteriorly more elongate and smaller, the anterior rather strong with strong neural and hæmal spines: pectorals placed high, their tips broken; dorsal beginning not far behind pectorals, the rays all soft and close set, the fin highest posteriorly where its rays are more than half head; caudal and last vertebræ lost; a trace of ventrals before pectoral; anal similar to dorsal, but only half as long, the last rays almost equally high.

The body of this fish agrees fully with our specimens of MERRIAMINA ECTENES, the head is equally evidently that of ECLIPES VETERNUS, the two forms, which at first seemed wholly unlike, being apparently one and the same species. What appeared in ECLIPES to be the large forked caudal is really the elevated posterior rays of the dorsal and anal fins, beyond which the vertebræ plainly extend in No. 190, ending in the type (No. XIII) of MERRIAMINA, with a narrow, truncate caudal fin. The species belongs apparently to the BROTULIDÆ. Unfortunately the name ECLIPES has page priority over MERRIAMINA.

A small example with more perfect head (No. 40), but lacking most of the body, shows the head long, with oblique gape and long, straight jaws, the maxillary 1¾ in head.

No. 54 is another imperfect specimen.

Family (uncertain)

Atkinsonella strigilis Jordan, new genus and species

A fossil (No. 511) was provisionally referred by us to LOMPOCHITES HOPKINSI. Renewed examination, however, shows its distinctness, the body being covered with small scales of very peculiar form, a character which distinguishes the new genus ATKINSONELLA, of uncertain relationship. It is named for William Sackston Atkinson, natural history artist of Stanford University, in recognition of his interest in restorations of these ancient fossils. The type of the species (No. 511) is 9½ inches long (in life about 13). The head is crushed, and the anal and caudal fins destroyed; otherwise the specimen is in good condition.

Head about 4 in length to base of caudal; depth about 4⅓. Vertebræ longer longer than deep, rather smooth, each mesially constricted and with two ridges and three grooves; the number probably 24 (16 preserved). Neural spines moderate, directed upward and backward, the anterior more curved and directed more backward; ribs strong.

Dorsal fin nearly continuous, the rays about IX, 17, not certainly counted; first part of 8 to 10 slender spines, the third longest somewhat more than depth of body; the others progressively shorter; soft rays long, and apparently all short; pectoral fin rather short, acute; the upper rays longest, about 3 times in depth of body. Ventrals inserted just behind them; the fin, if correctly interpreted, a little longer than the pectorals and of about 8 slender rays. Unfortunately this very exceptional character is uncertain—as the fin as preserved may be a misplaced fin, possibly a pectoral from the other side.

Scales small, of unique form, largest on the thorax, and rather loosely attached, being scattered in the matrix about the fish. Each scale is rounded in form, with entire edges, but marked by 6 to 9 sharp ridges which diverge forward and upward, about 100 in a lengthwise series.

ADDENDUM

Family DUSSUMIERIIDÆ

We may here insert two fossil species just received as these pages pass through the press.

Quæsita alhambræ Jordan and Gilbert.

(Plate XXVIII)

Type No. 198. A minute fish but three-fourths of an inch long, from a Miocene outcrop of diatomaceous shale near Alhambra, Los Angeles County, California, presented by Mr. George E. Malcolm. The head, dorsal fin and spinal column are fairly preserved.

Body fusiform, elongate. General shape of QUÆSITA, rather heavier at the nape, decreasing rather rapidly backward. Head large, 2.6 in length to base of caudal, its depth 4½ times in length, depth at nape about 5 in length of body; eye obliterated, the interorbital shelf strong; mouth rather short, oblique, the lower jaw projecting, reaching front of orbit; maxillary about 4½ in head; no teeth evident; opercle rounded, with five or six strong striæ, radiating from above; preopercle narrow; cheeks broad.

Vertebræ large, about 30 in all, the number uncertain, as in part they are rather vaguely defined; each is apparently deeper than long, their strength well maintained backward; the vertebræ are peculiarly formed, looking like a succession of cross-plates, each crossed by a median notch; neurals and hæmals obliterated; ribs slender; no trace of interneurals; hypural plate obliterated; caudal split, widely forked, its lobes 4 in length of body; ·⅓ in head; about 16 rays in each lobe, the lobes acuminate. Dorsal inserted just behind middle of body, opposite twelfth vertebra, 6 to 8 rays visible; trace of ventrals just below it; anal mostly obliterated, with traces of about 12 rays. No scales preserved.

This fish seems allied to QUÆSITA and other genera referred to the DUSSUMIERIIDÆ, but the large vertebræ, deeper than long and less than 35 in number, may distinguish it generically from all the other fishes of this group. For the present we treat it as a second species of QUÆSITA.

Quæsita fragilis Jordan and Gilbert, new species.

Type No. 110, a small fish, one and a half inches long, from the San Pedro Hills, one mile west of "Wilmington Road" station on Pacific Electric Railway from Los Angeles to San Pedro.

Head 2⅗ in length, depth at dorsal 5½ times in length, eye 3½ in head, snout $3\frac{1}{2}$, head large, its depth not less than that of body at dorsal, orbital region crossed by a marked interorbital shelf. Dorsal rays 10, anal 10 to 12; vertebræ $20 + 14 = 34$. Opercle well developed, broadly rounded. Vertebræ strong, longer than deep, maintaining their strength well backward, nine or ten before the dorsal. Neurals and hæmals strongly developed in the caudal region, but obliterated anteriorly. Hypural plate obscure. Head and mouth large, jaws subequal, the mandible reaching to opposite the eye. Dorsal fin relatively large, opposite the moderate ventrals, its insertion very slightly behind the middle of distance from front of eye to base of caudal; pectorals narrow, slender, inserted low as in other herring-like fish; ventrals shorter than pectorals, the number of rays indistinct; anal longer and lower than the dorsal, its rays more numerous; caudal broadly forked, its lobes long, subequal, a little greater than depth of body, one and one-fifth times in head.

This little fish is certainly congeneric with QUÆSITA QUISQUILIA, described and figured by us from Miocene shales at El Modena, California, in our *Fossil Fishes of Southern California,* Plate XVII. It differs in the rather stouter form and fewer vertebræ. In Q. QUISQUILIA we find 38 vertebræ, 13 before dorsal. QUÆSITA ALHAMBRÆ, above described, has the head more depressed, the insertion of the dorsal fin much farther back than in Q. QUISQUILIÆ, and the vertebræ apparently 31. In most respects it is very similar.

This example is from a diatomaceous shale lying just above a Miocene ledge. Its age is almost certainly Pliocene. As to the locality, Dr. Gilbert writes that the fish was secured while on a trip with Mr. Robert Hastings Palmer of Stanford. The reason why he places it as Pliocene is because in Los Angeles city he finds a division line which is likely between the upper Miocene and lower Pliocene, and this outcrop has certain clams in abundance at this particular horizon, similar to those at San Pedro. The superimposed layers of Pliocene lie unconformable to the stratum in question.

Thyrsocles and Thyrsion (page 13).

Just as these pages leave the press, Mr. Edward J. Porteous of Lompoc has sent to Stanford University a large and perfect example (No. 505: 22½ inches long) of the fish we have called Thyrsocles eschiarion. This has the long jaws and crowded conical teeth of Thyrsion velox. The two species are in fact identical, and Thyrsion seems to be an exact synonym of Thyrsocles. The name velox has page priority and the species (if distinct from T. kriegeri) becomes Thyrsocles velox. Thyrsocles mentioned on page 7 was first associated with a known species.

Thyrsocles, with the neural structures of Scomberomorus (obliterated on plate IX.), is widely separated by the long jaws and close-set conical teeth.

Zaphileges agrees with it in almost all regards, but has scales larger than in any known mackerel. We have found no scales in Thyrsocles, but the two genera may prove identical. Zaphileges certainly belongs also to the Scombridæ.

Plectrites (page 28); an additional example shows the sides of the jaws beset with molar teeth, as in Lagodon. Plectrites is probably a synonym of Rhythmias, the plectroid spine probably obliterated in the type of R. starrii.

Lompochites (page 30) is not related to Lompoquia. It is nearer some of the Carangidæ, perhaps to Elagatis.

Diatomœca (page 40) certainly cannot belong to the Pleuronectidæ. No flounder has its peculiar arrangement of ribs and interhæmals. We find as yet nothing like it, except perhaps in Lampris.

Eclipes (page 41) belongs to the Gadidæ or perhaps Merlucciidæ. It cannot be a Brotulid.

PLATES

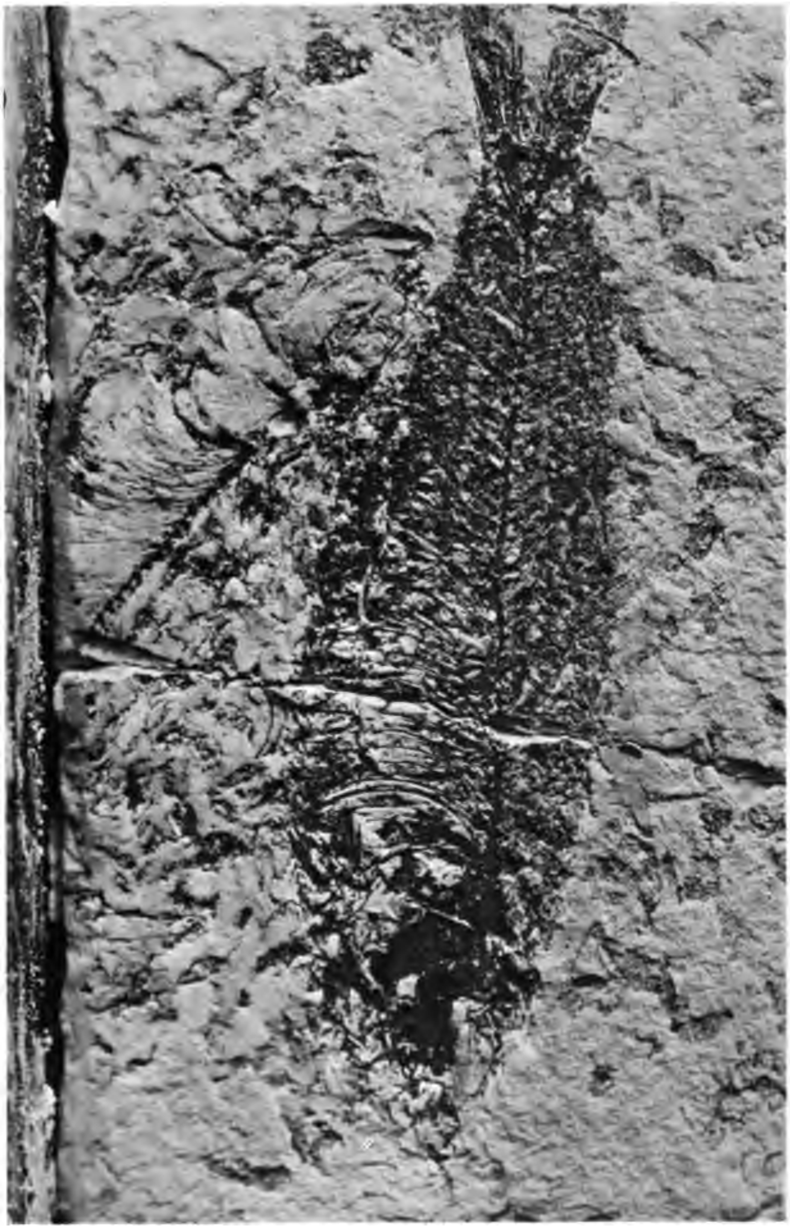


PLATE I.

XYNE GREX Jordan & Gilbert; No. 116 (slightly reduced).

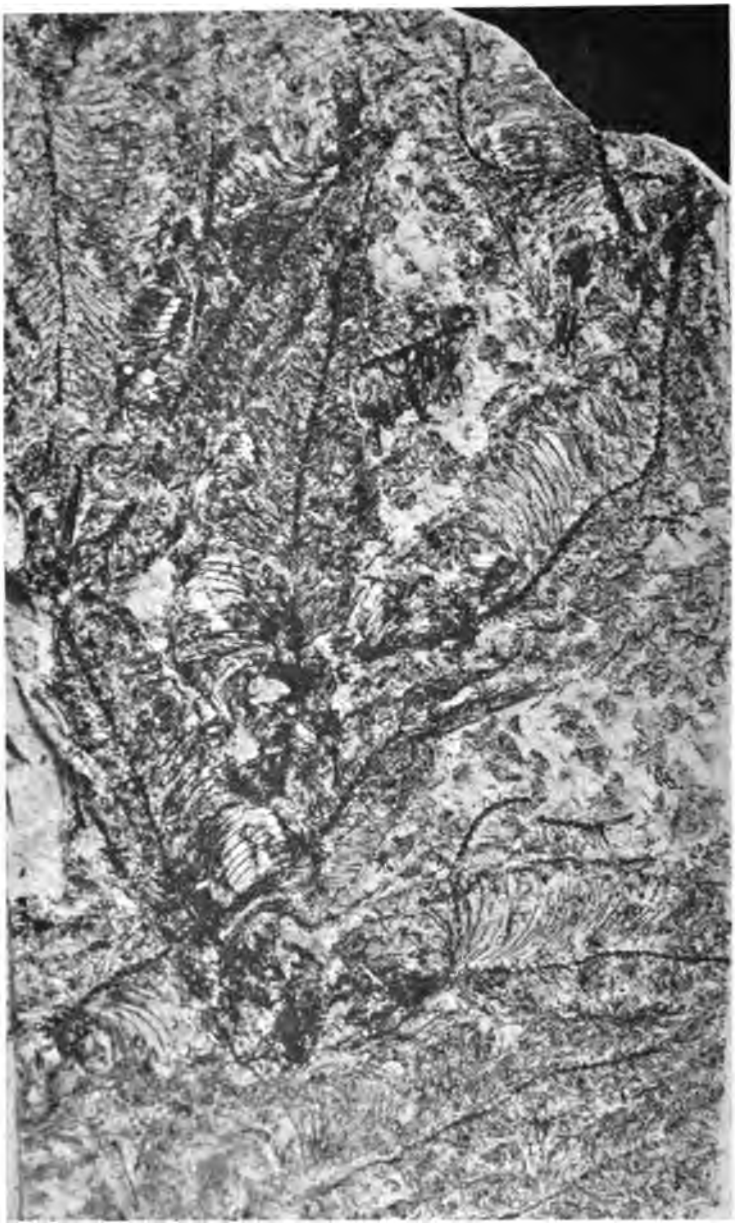


PLATE II.

Xyne grex Jordan & Gilbert; No. 12; carbonized examples (reduced to about one third).

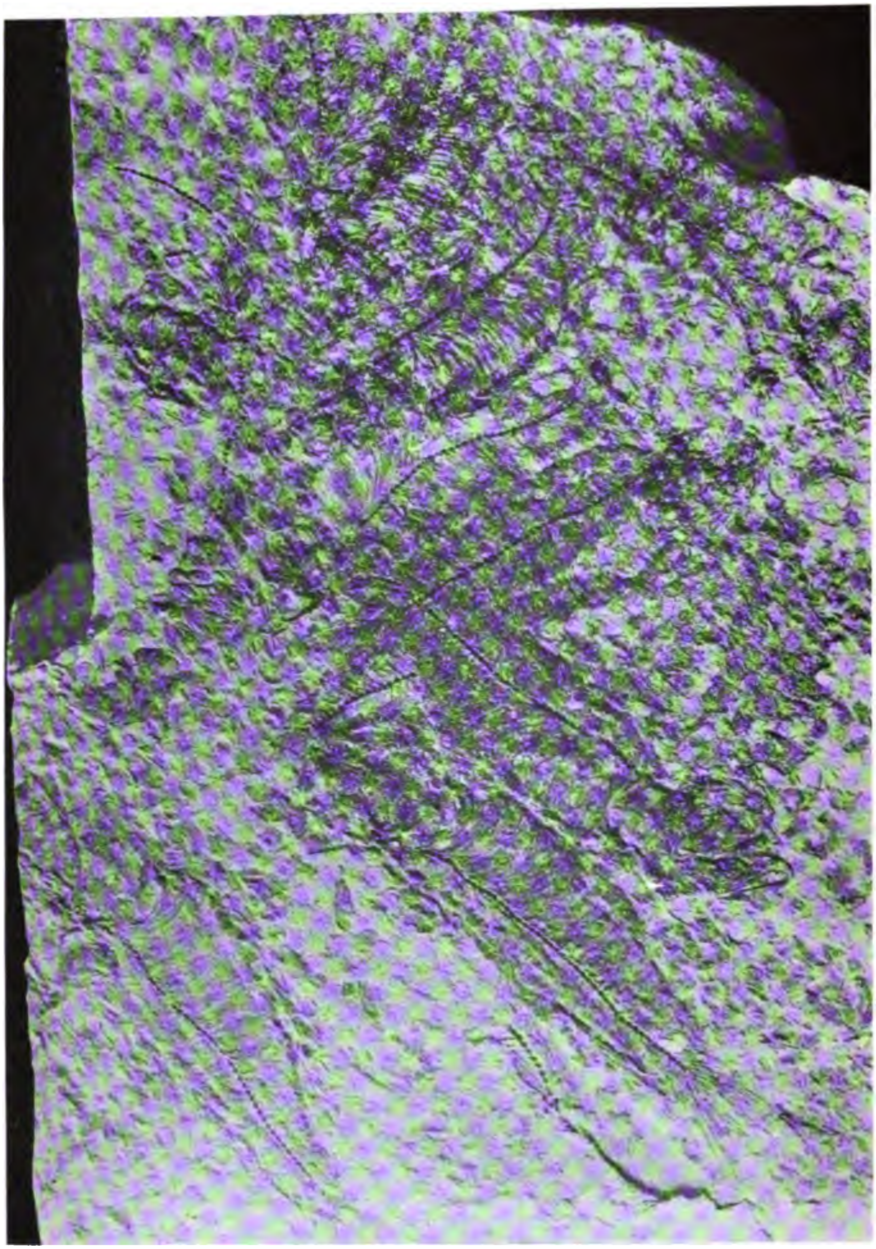


PLATE III.

Xyne grex Jordan & Gilbert; No. 11; examples scarcely carbonized (reduced to about one-third).

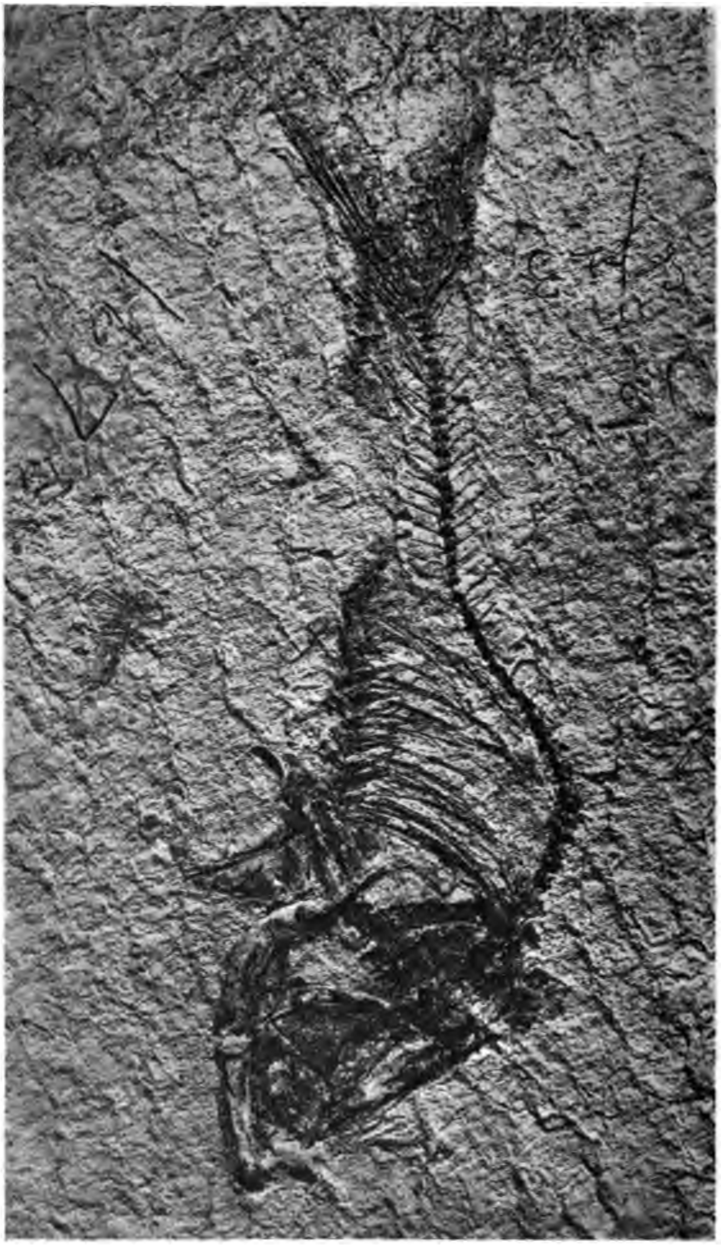


PLATE IV.

Xyne fitgeri Jordan & Gilbert; type No. 167 (natural size).

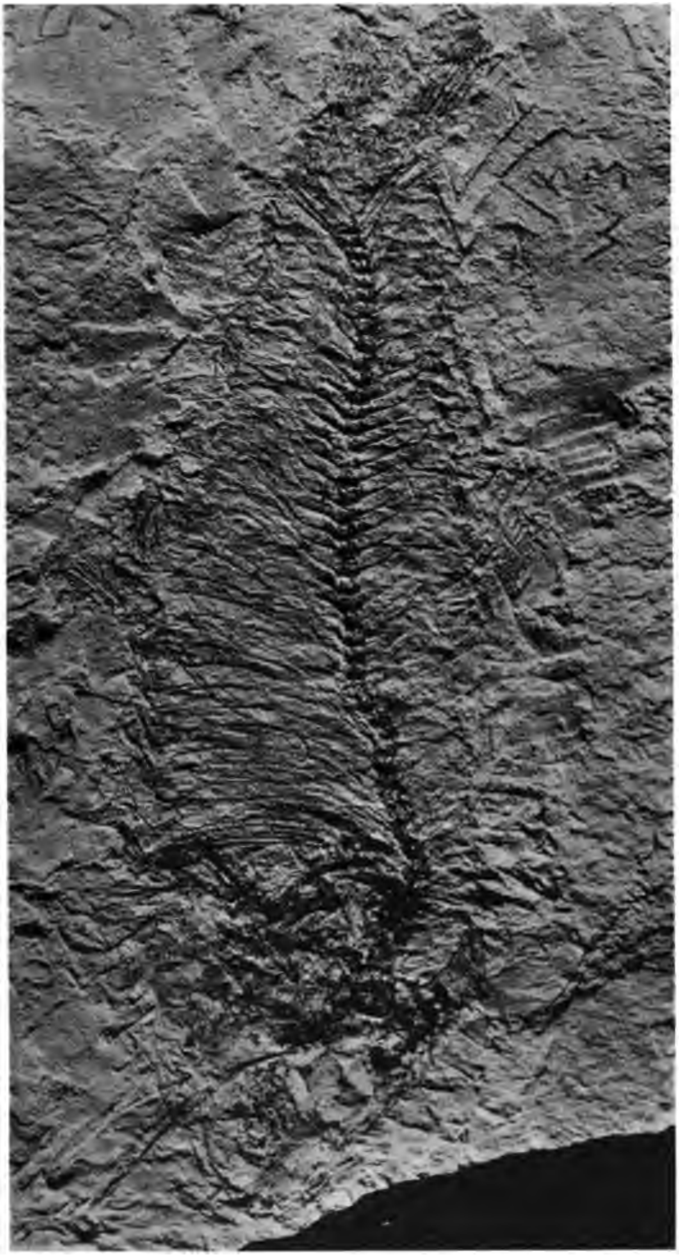


PLATE V.

Xyne fitgeri Jordan & Gilbert; No. 26 (natural size).

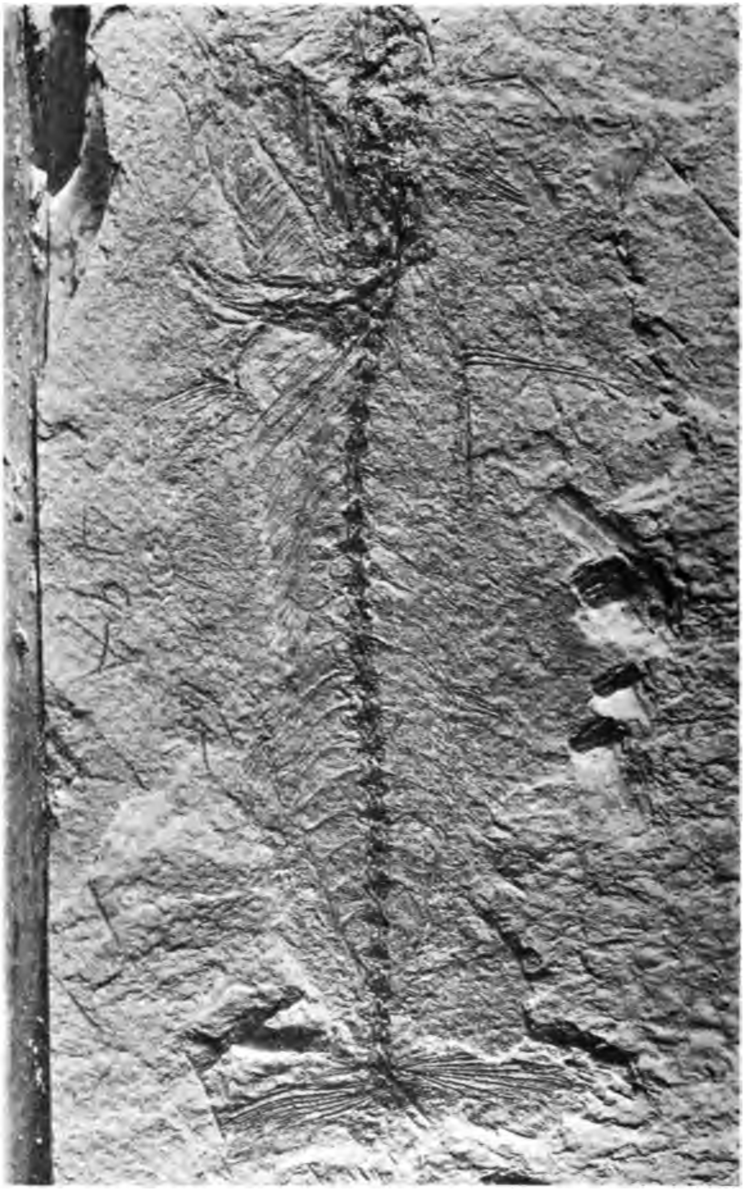


PLATE VI.

Turio wilburi Jordan & Gilbert; type No. 49-A (somewhat reduced).

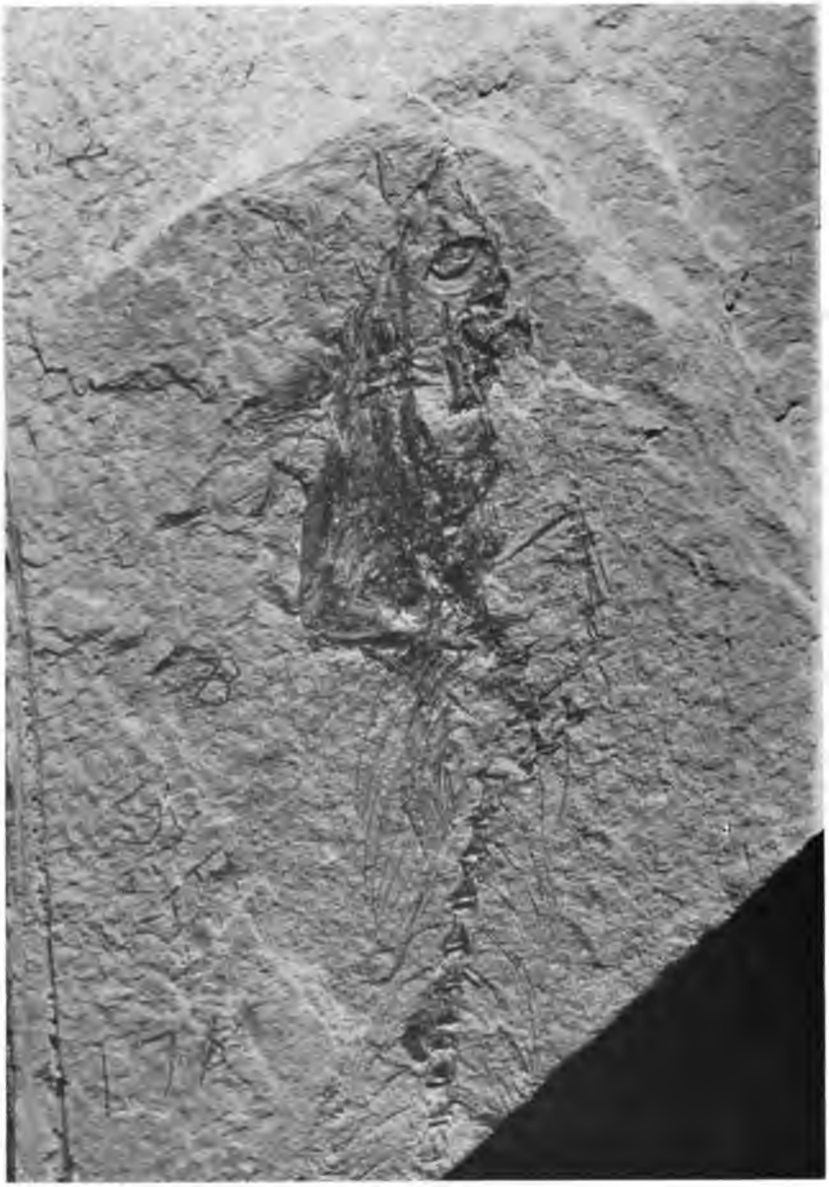


PLATE VII.

Turio wilburi Jordan & Gilbert; No. 178.

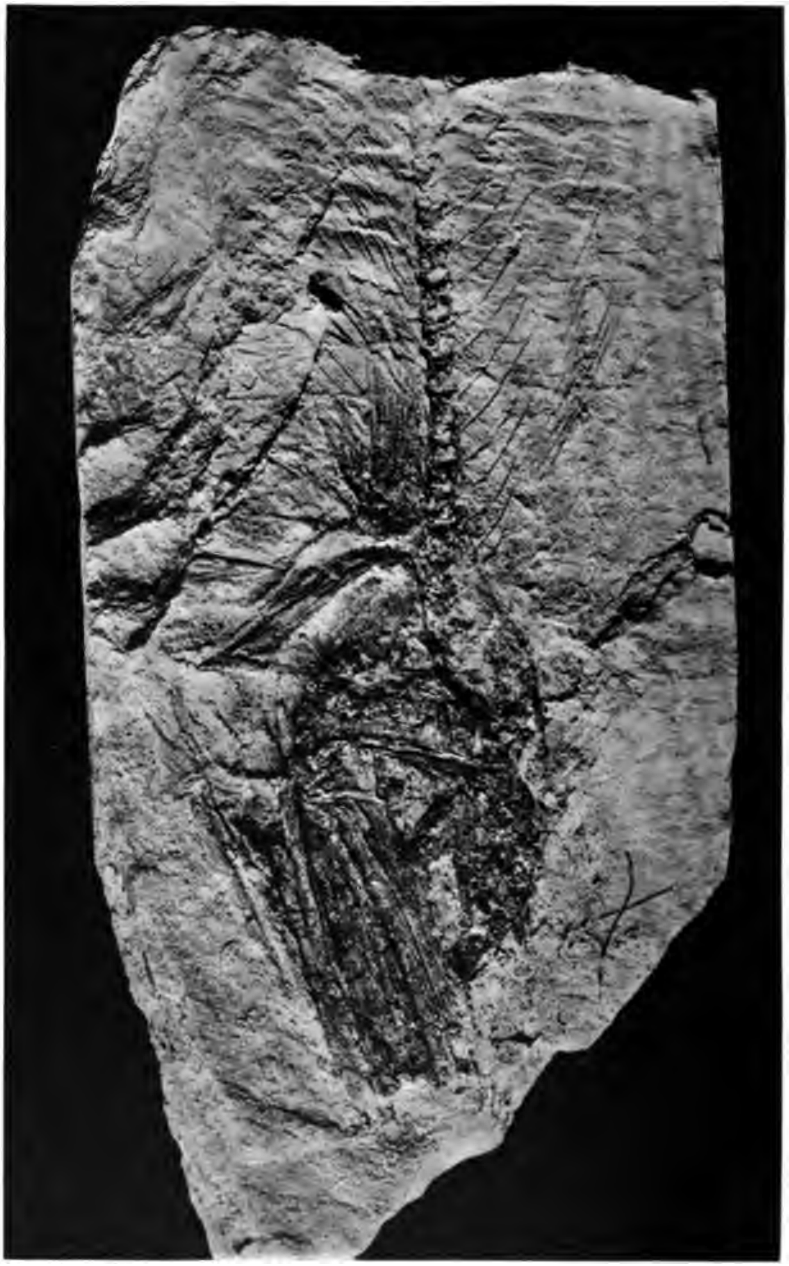


PLATE VIII.

Thyrsion velox Jordan; type No. 153 (slightly reduced).

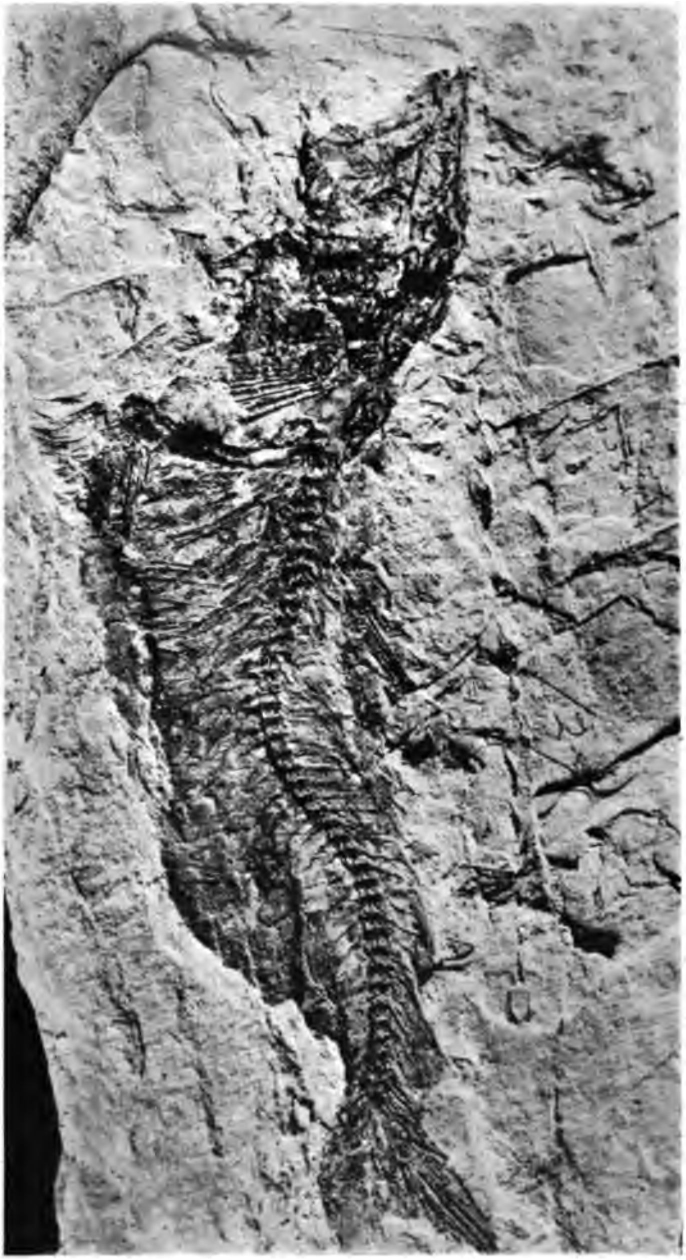


PLATE IX.

Thyrsion velox Jordan; No. 127 (reduced one-half).

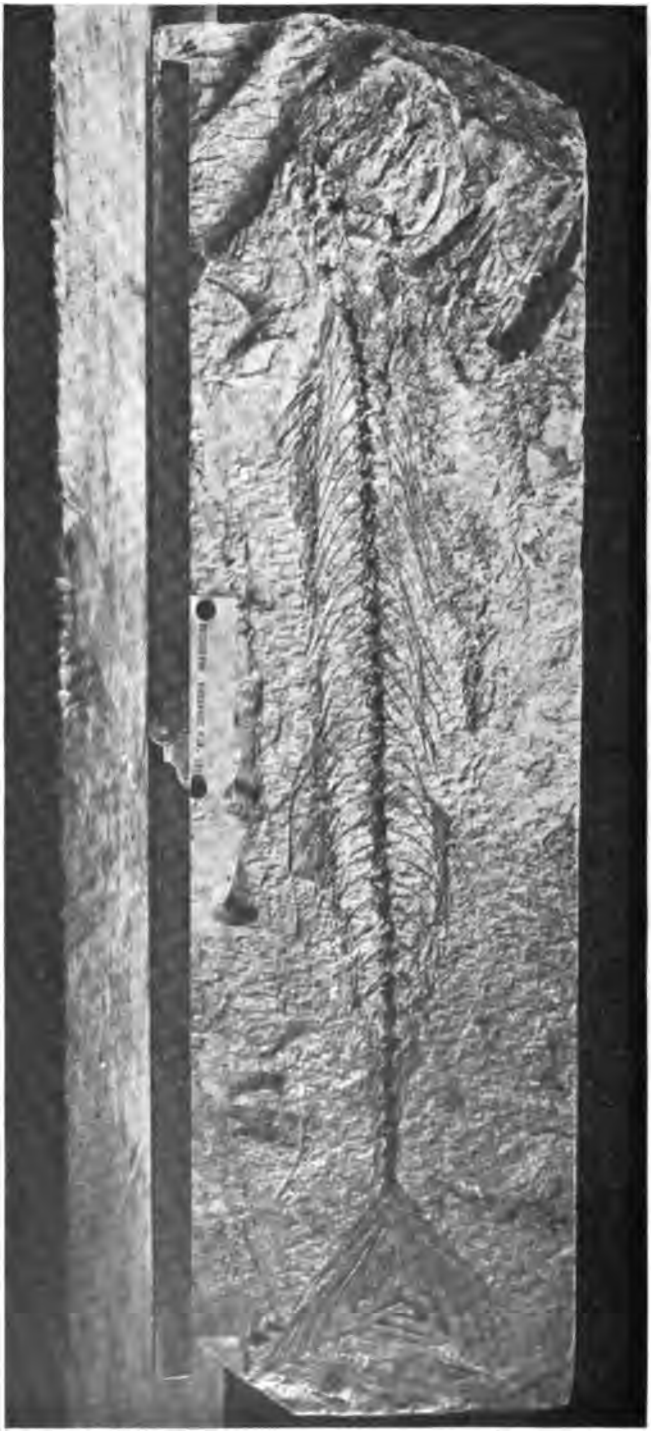


PLATE X.

Ocystias sagitta Jordan; type No. 20 (reduced to about one-third).

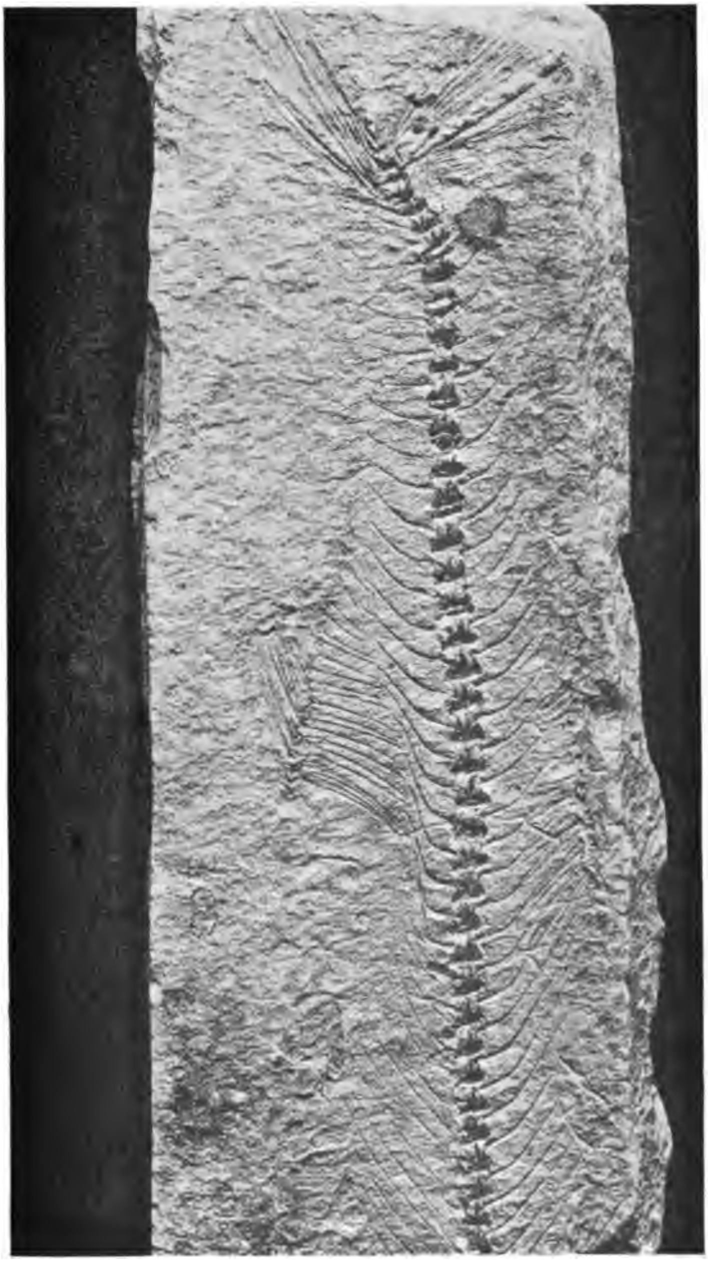


PLATE XI.

THYRSOCLES KRIEGERI Jordan & Gilbert; No. 303 (reduced to two-fifths)

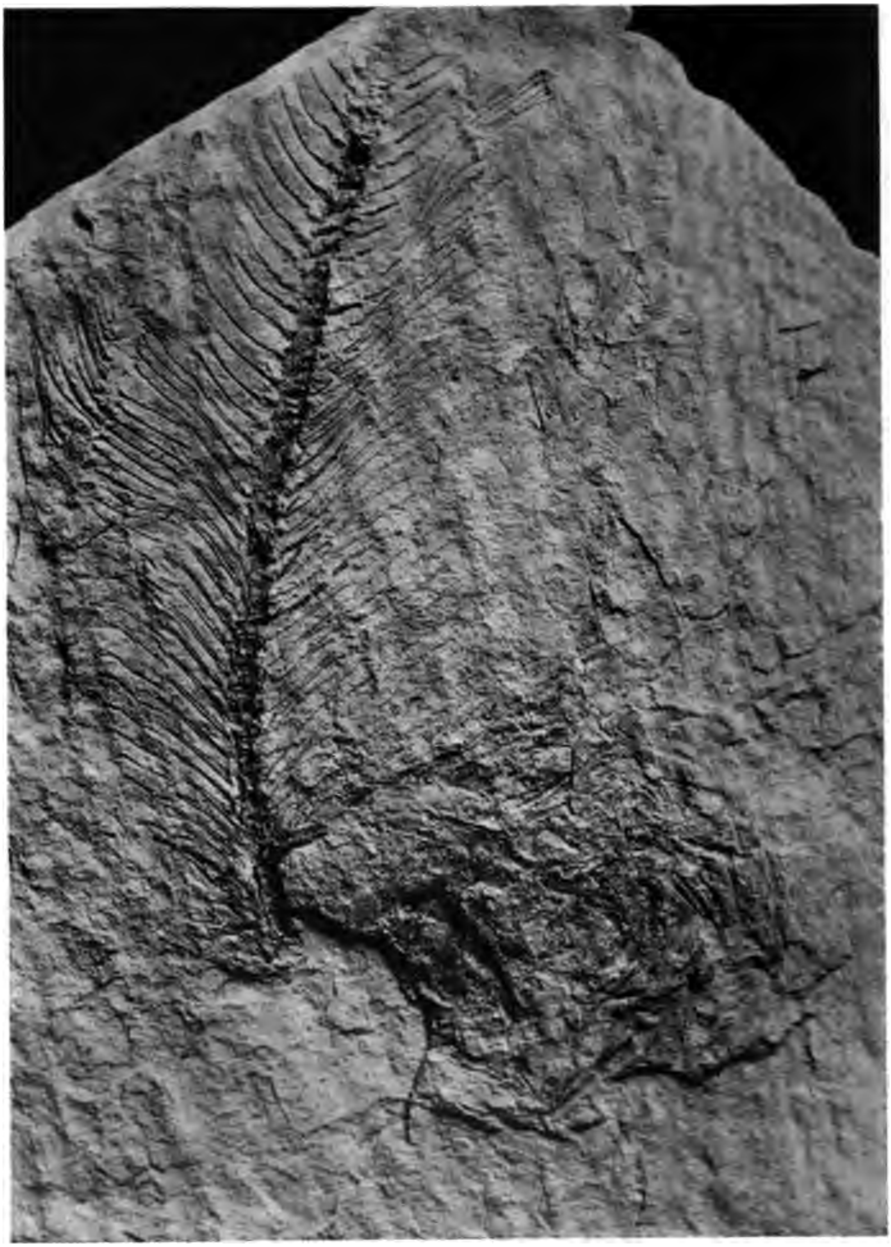


PLATE XII.

THYRSOCLES KRIEGERI Jordan & Gilbert; No. 306 (reduced to about one-third).

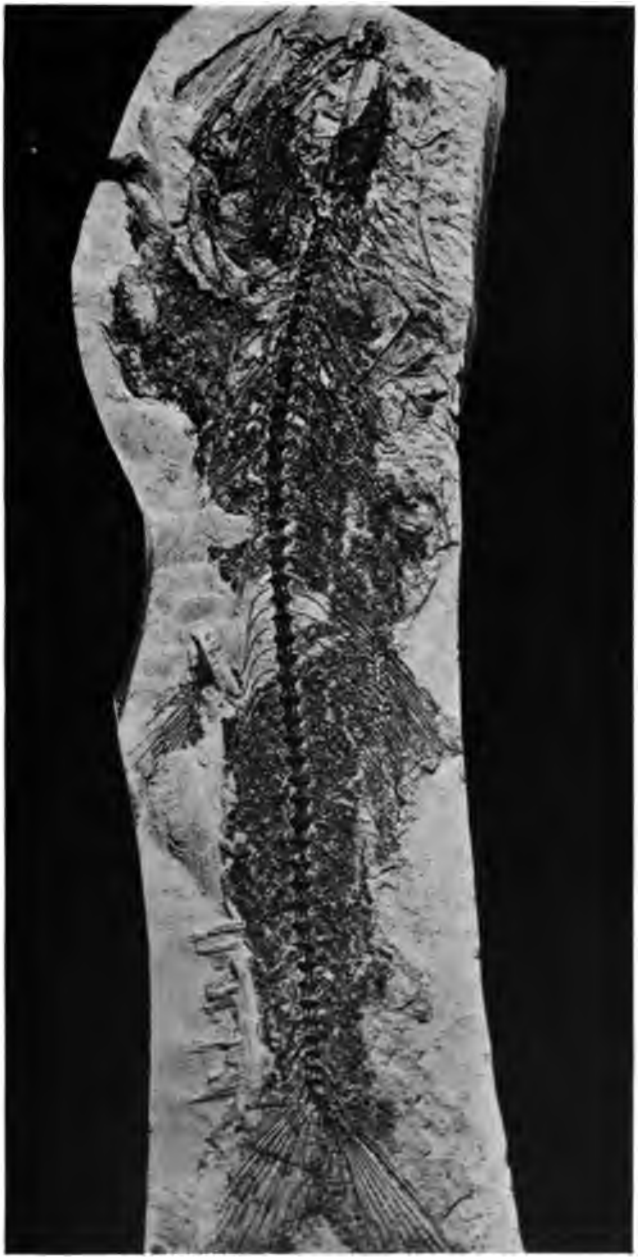


PLATE XIII.

Zaphleges longurio Jordan; No. 100 (reduced to about two-fifths length); ventral fin obscured in the plate.

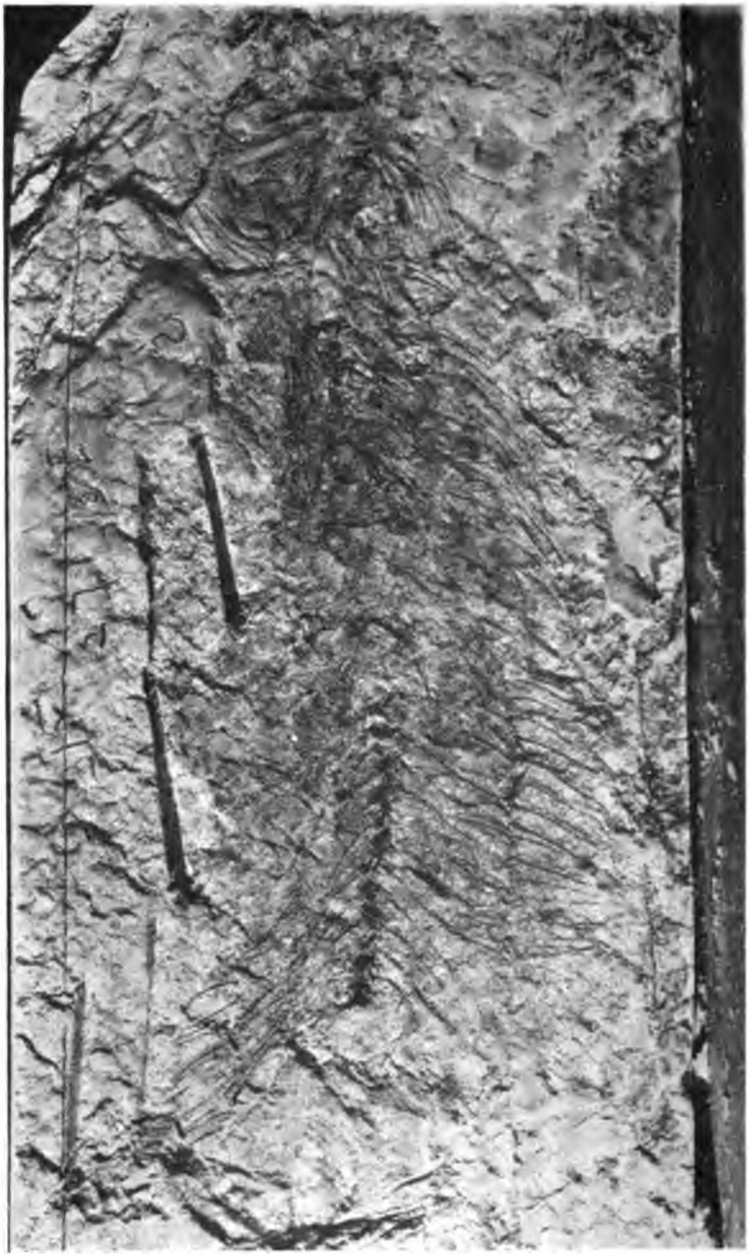


PLATE XIV.

Aræosteus rothii Jordan & Gilbert; type No. 315 (two-thirds natural size).

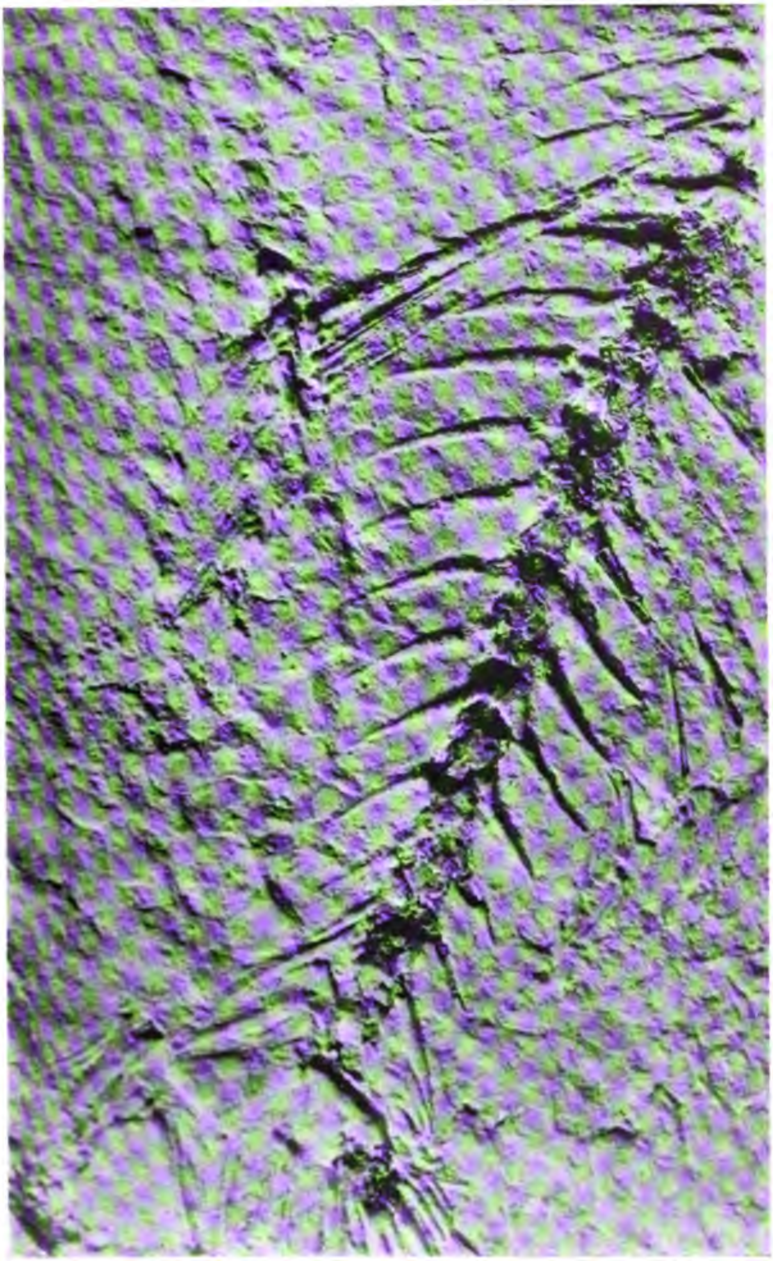


PLATE XV.

EMMACHÆRE RHACHITES Jordan & Gilbert; type No. CXLIII (natural size).

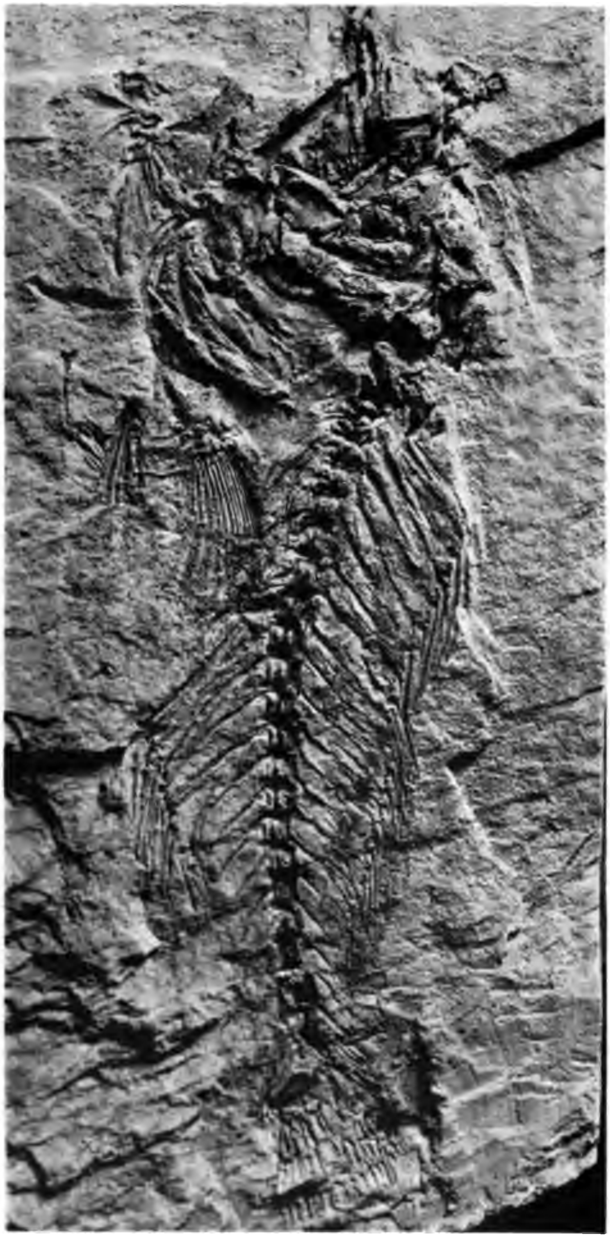


PLATE XVI.

Emmachære rhachites Jordan & Gilbert; No. 220 (reduced to about two fifths size).

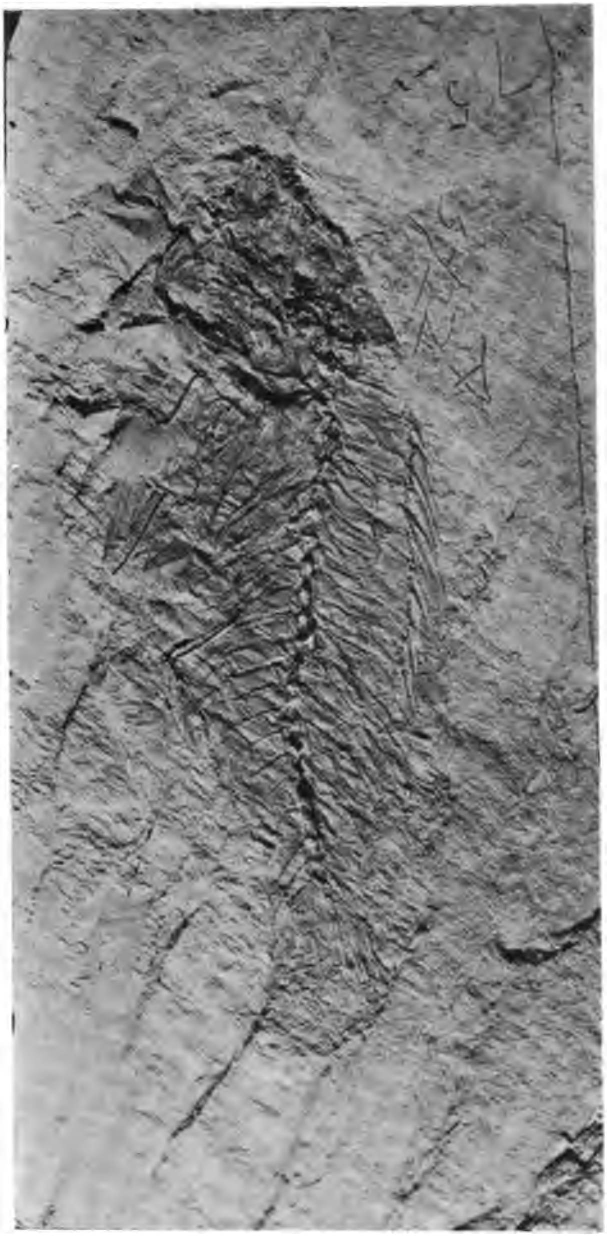


PLATE XVII.

RHYTHMIAS STARRII Jordan & Gilbert; type No. 175 (slightly reduced).

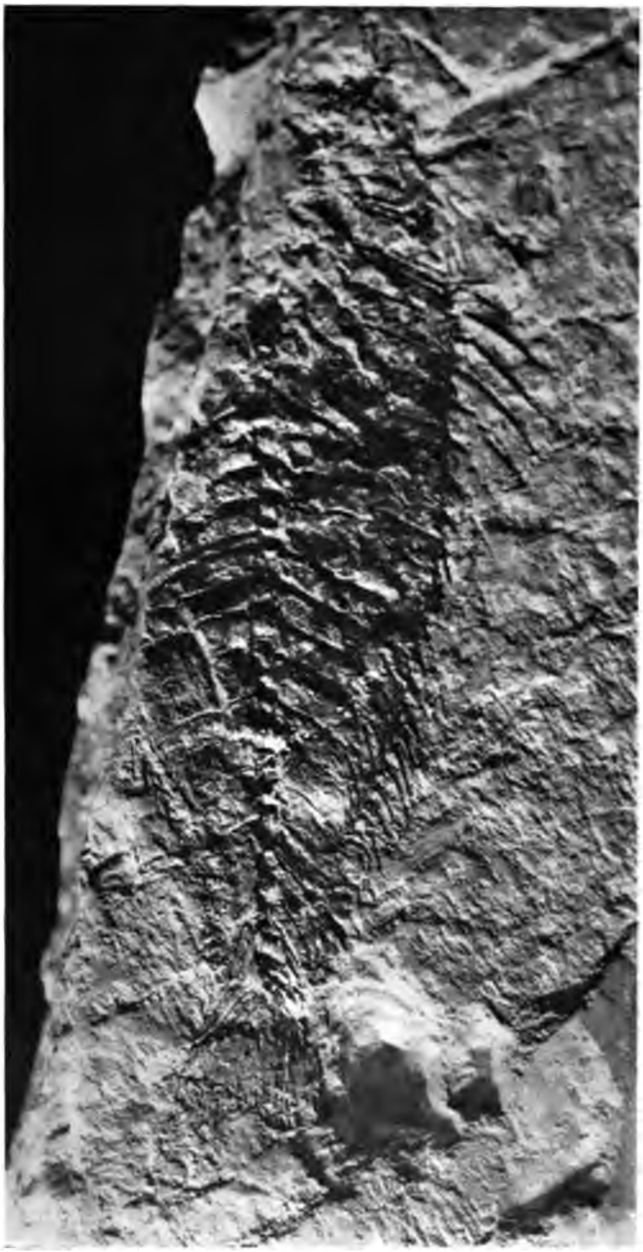


PLATE XVIII.

Plectrites classeni Jordan & Gilbert; type No. 313 (slightly reduced)

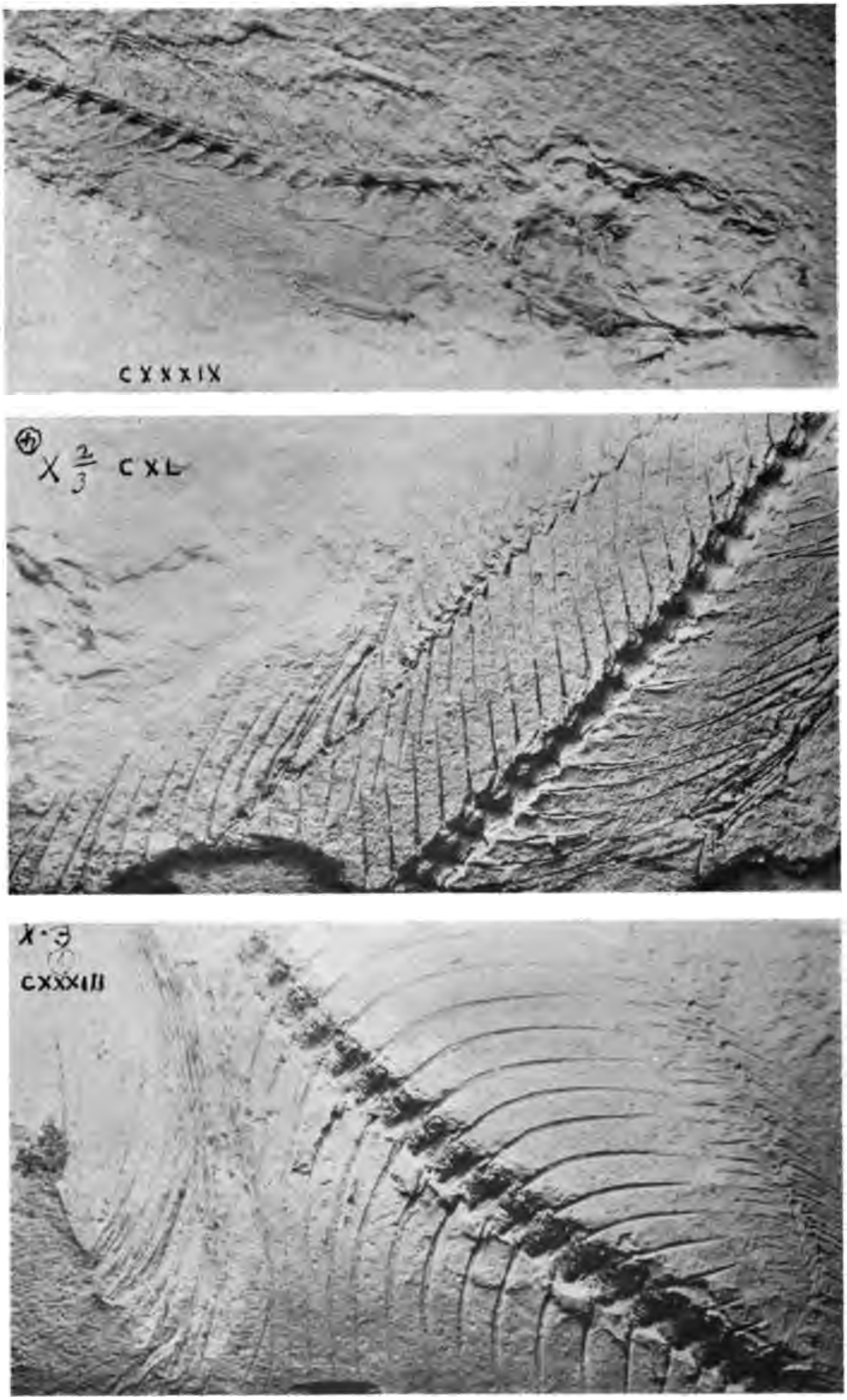


PLATE XIX.

Lompoquia retropes Jordan & Gilbert; type cxxxix (slightly reduced).

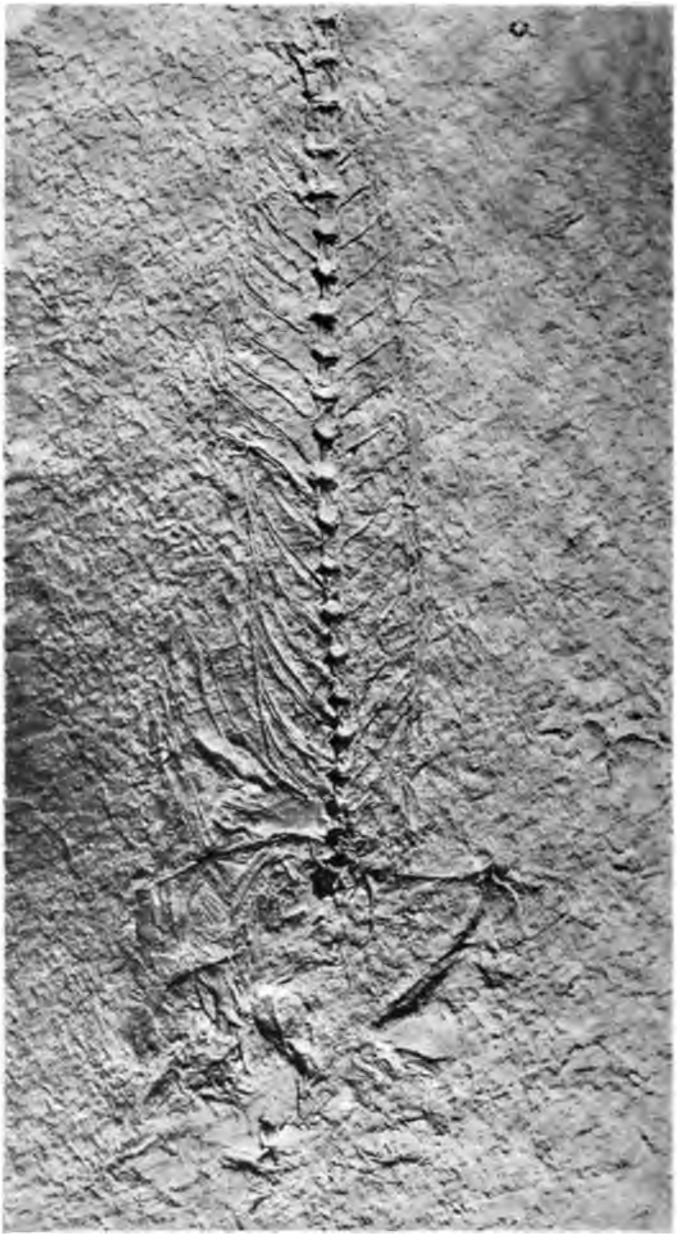


PLATE XX.

Lompochites hopkinsi Jordan & Gilbert; type No. 301 (reduced two-thirds natural size).

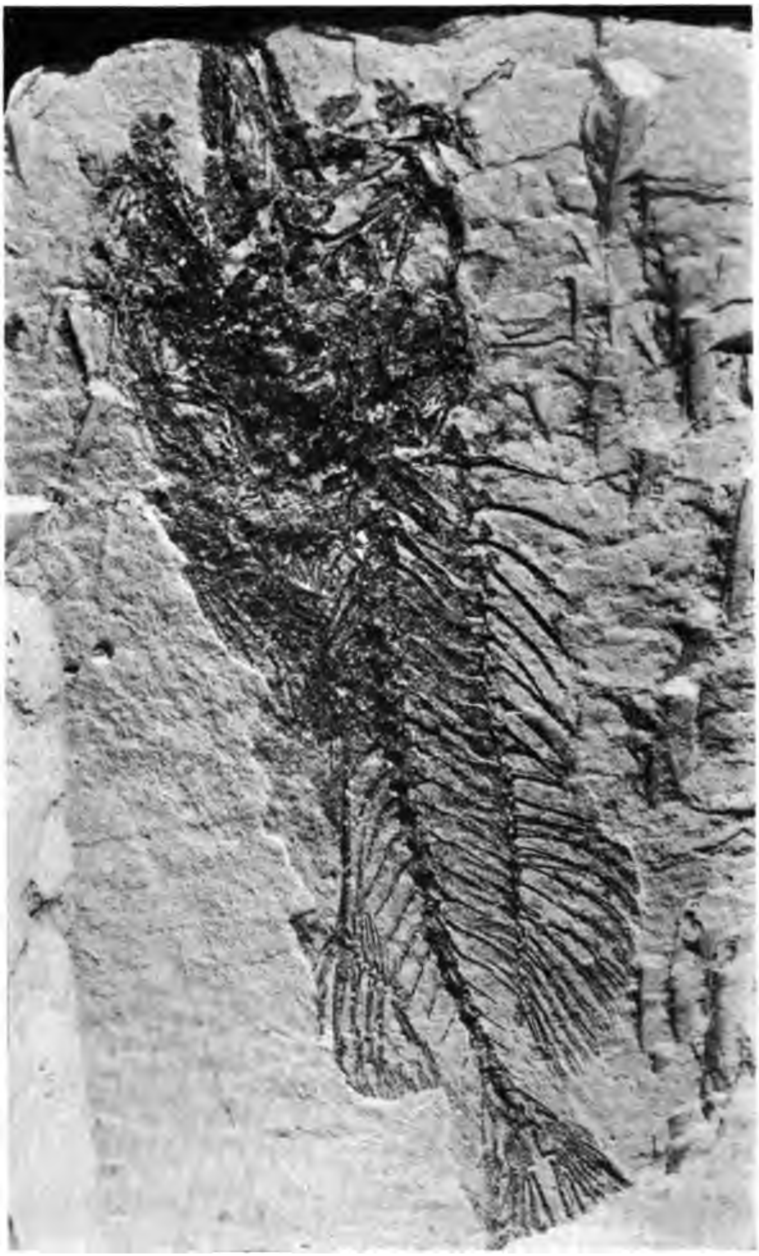


PLATE XXI.

Rixator porteousi Jordan & Gilbert; type No. 300 (one-third size); second anal spine broken.

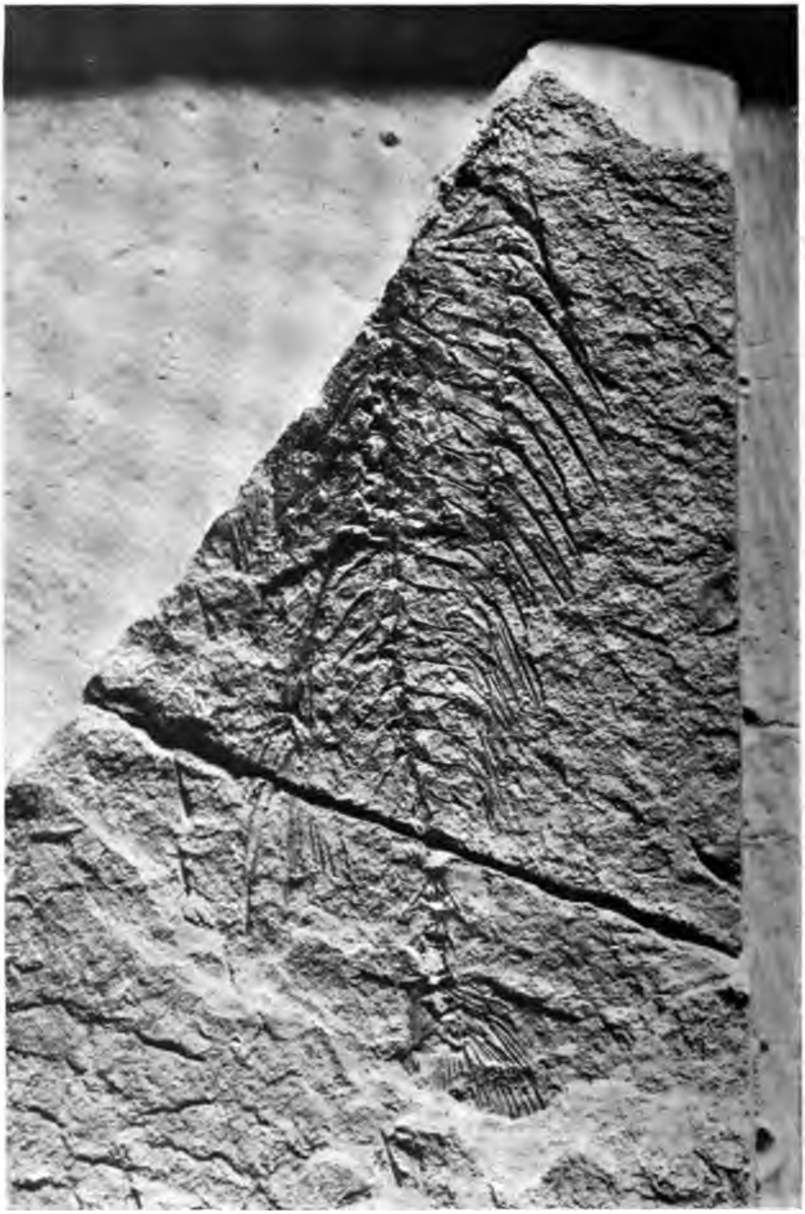


PLATE XXII.

Rixator inezlæ Jordan & Gilbert (young); No. 243 (slightly reduced).

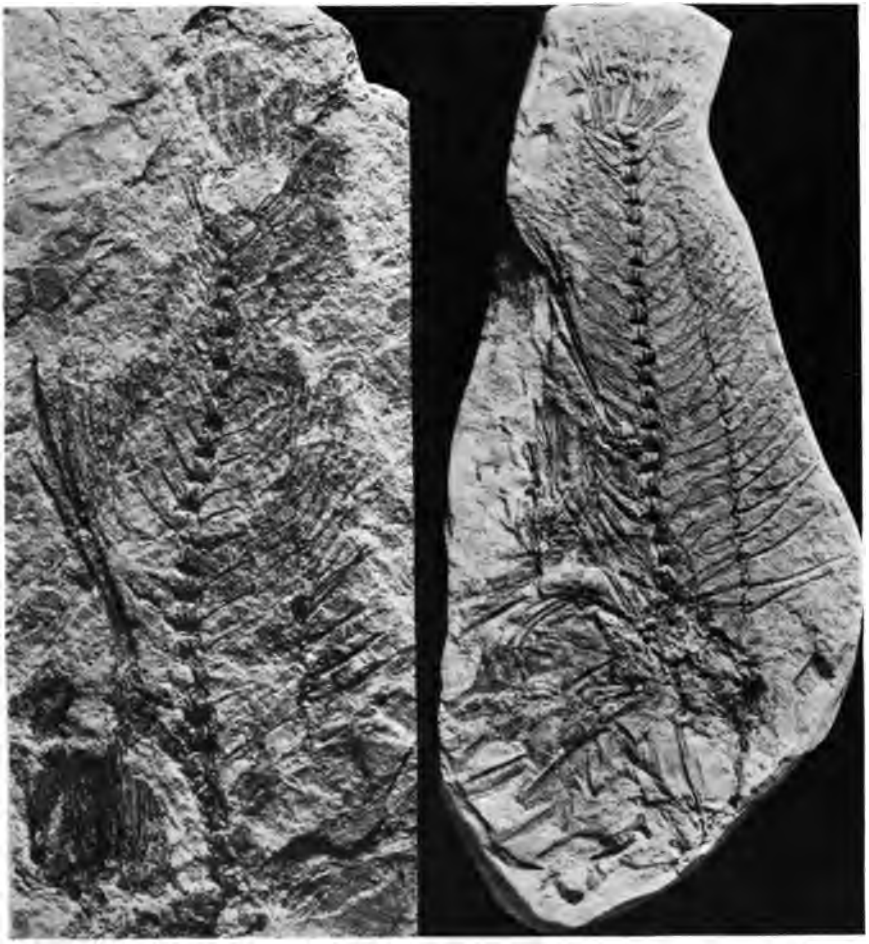


PLATE XXIII.

Figure 1. Rixator porteousi Jordan & Gilbert (young); No. 246 (two-thirds natural size).

Figure 2. Rixator ineziæ Jordan; type 145-B (two-thirds natural size).

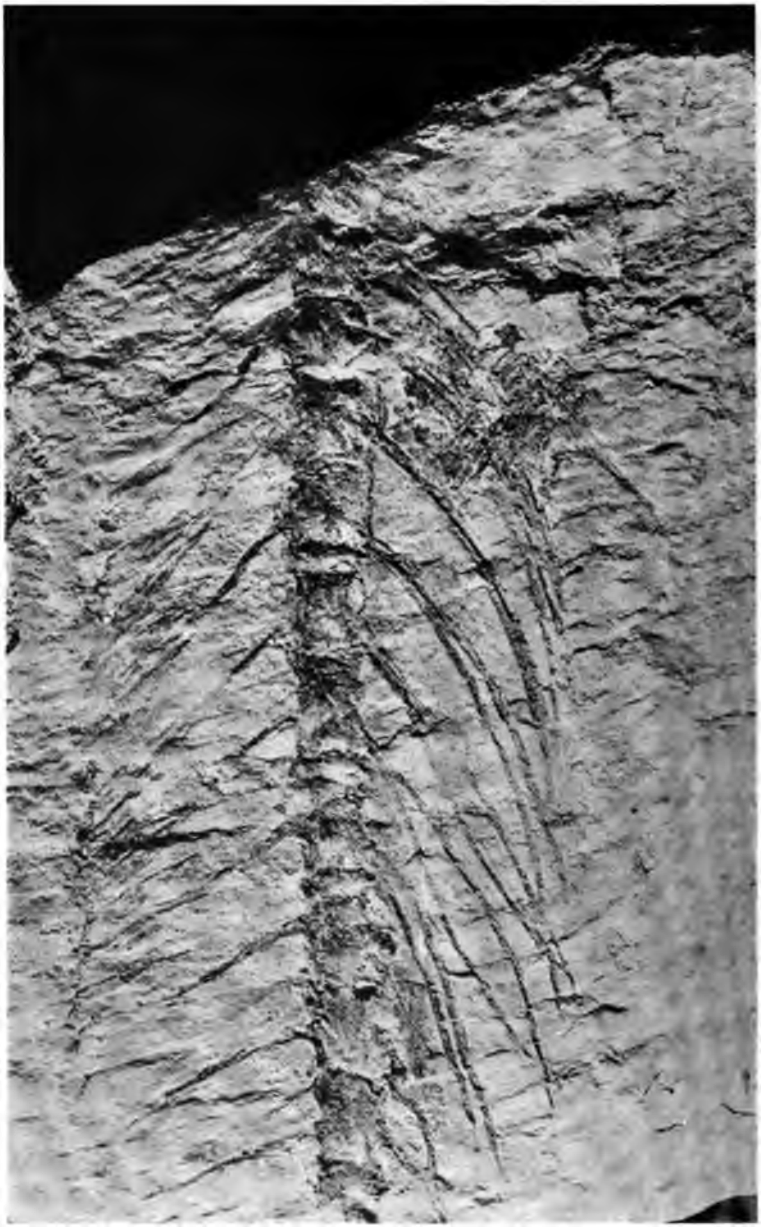


PLATE XXIV.

OZYMANDIAS GILBERTI Jordan; No. 13 (reduced about half); identification uncertain.

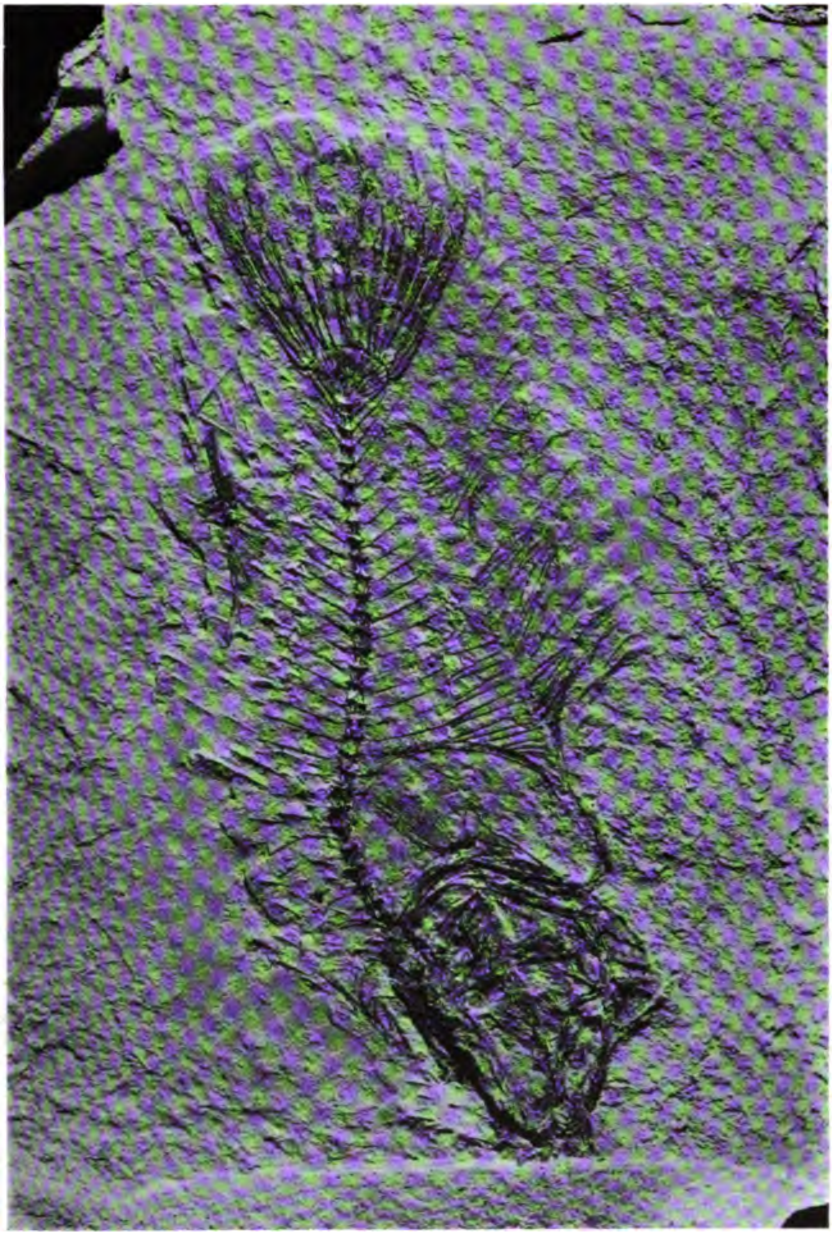


PLATE XXV.

Evesthes jordani Gilbert; No. 509 (three-fifths natural size).

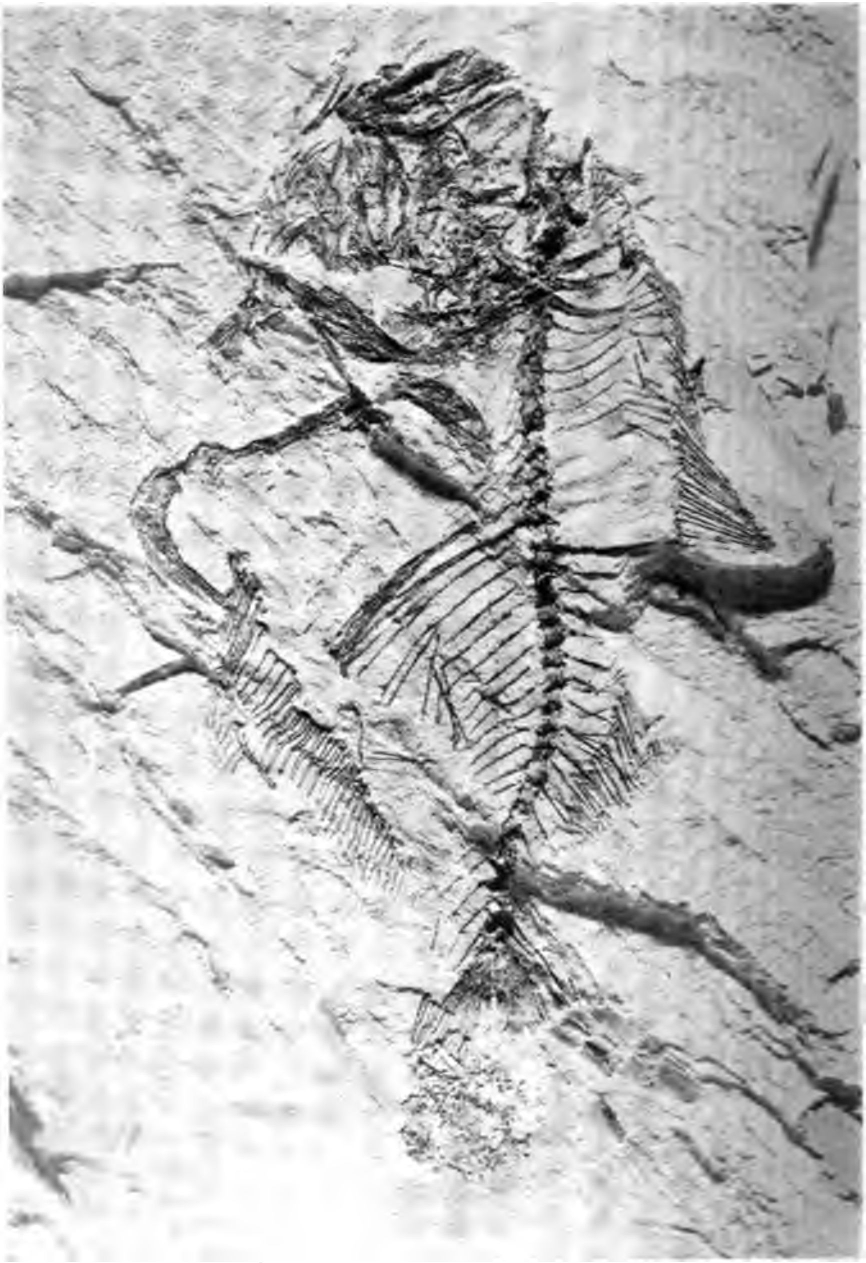


PLATE XXVI.

Evesthes hooveri Jordan; type No. 307 (reduced to about half size). (Dark shadows due to flaws in rock.)

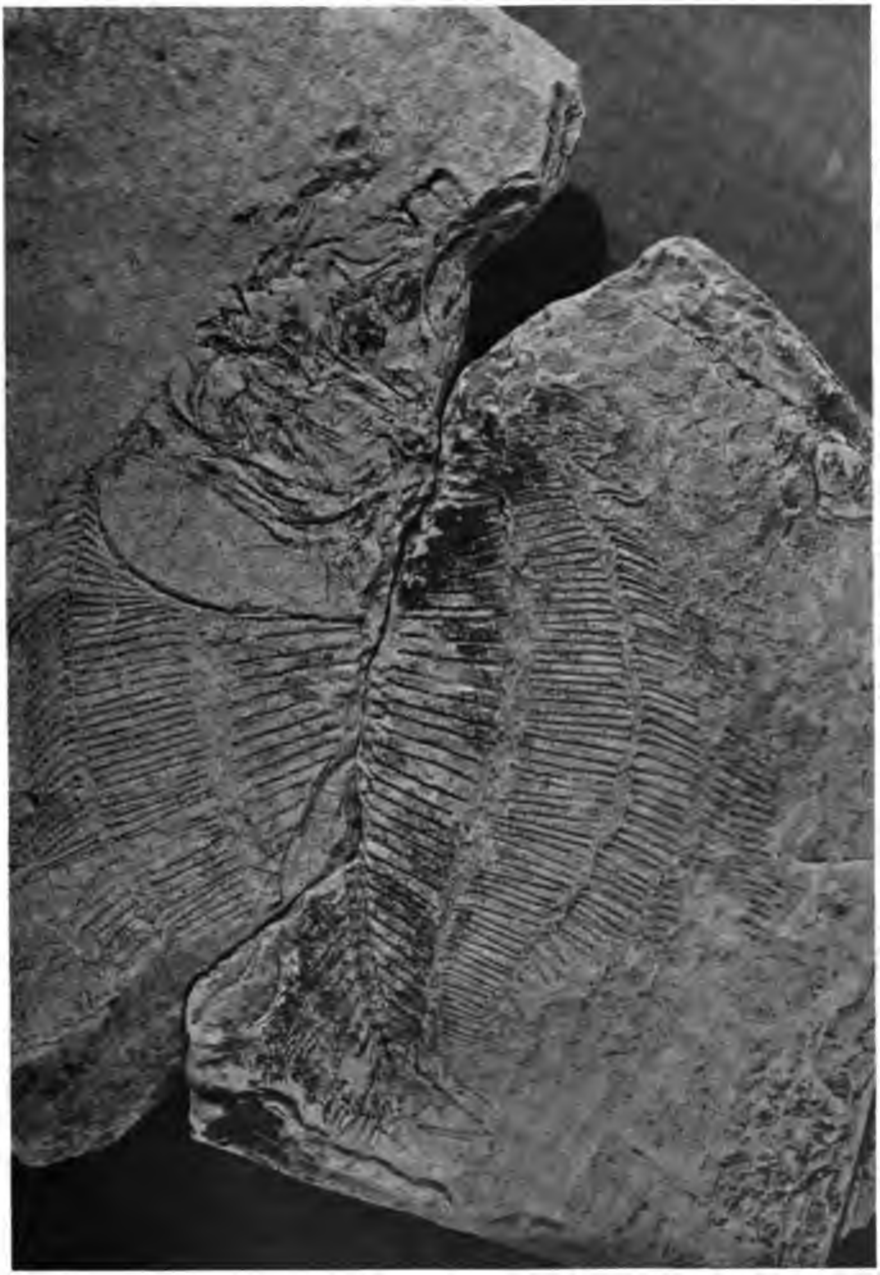


PLATE XXVII.

ZORORHOMBUS VELIGER Jordan; type No. 230 (about half natural size).

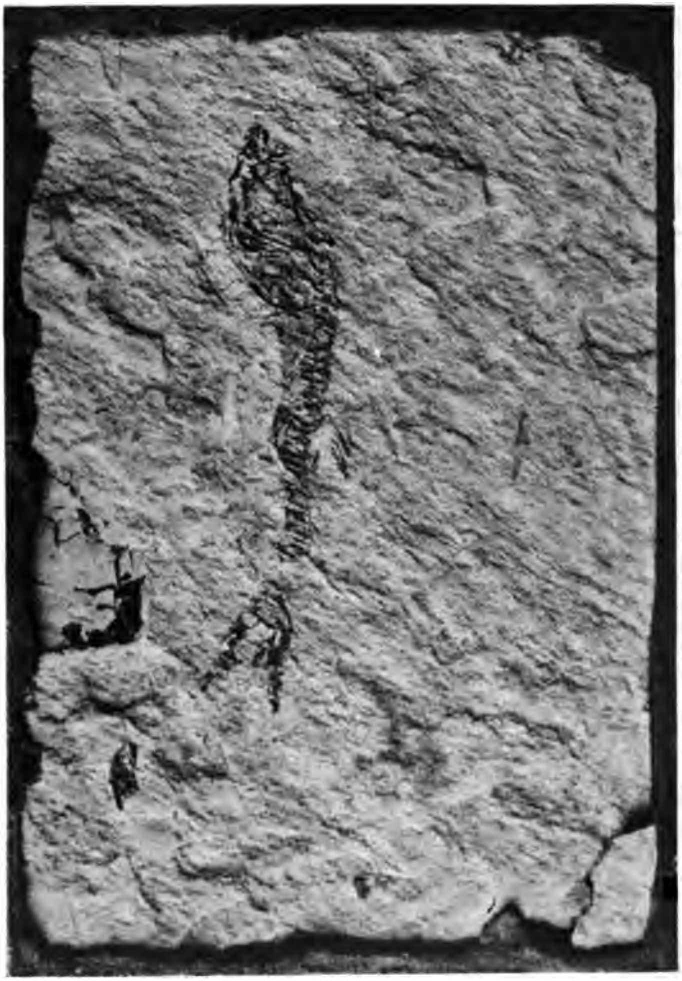


PLATE XXVIII.

QUÆSITA ALHAMBRÆ Jordan & Gilbert; type No. 198 (four times natural size).

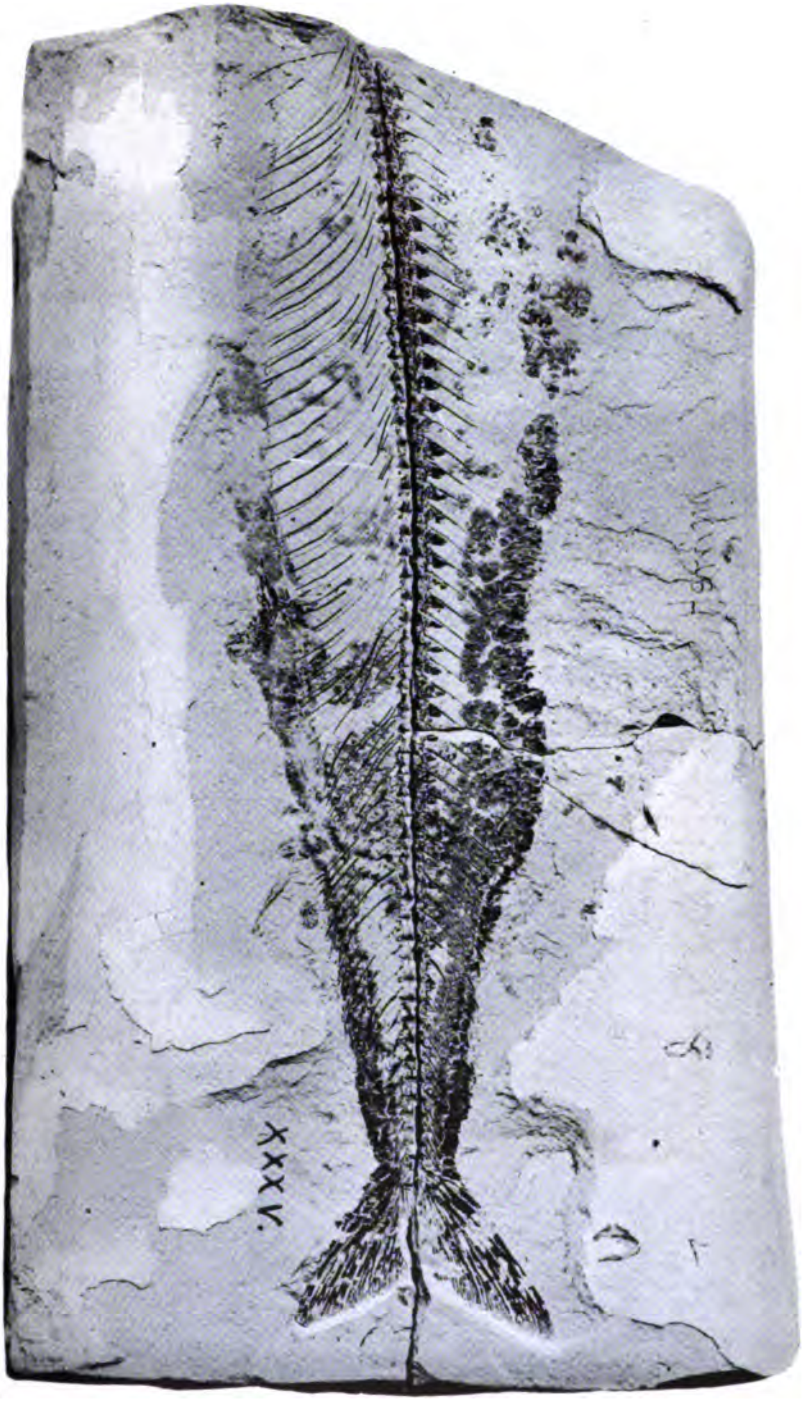


PLATE XXIX.

ZELOSIS HADLEYI Jordan & Gilbert; type No. XXXV. "CLUPEA HADLEYI," from El Modena (slightly reduced); the small ventral fins plainly evident in the fossil are barely indicated on the plate.

[illegible]

LELAND STANFORD JUNIOR UNIVERSITY PUBLICATIONS
UNIVERSITY SERIES

THE GENERA OF FISHES

PART IV.

FROM 1881 TO 1920, THIRTY-NINE YEARS, WITH THE
ACCEPTED TYPE OF EACH

A CONTRIBUTION TO THE STABILITY OF SCIENTIFIC NOMENCLATURE

BY

DAVID STARR JORDAN
Chancellor-Emeritus of Stanford University
Member of the International Commission of Zoological Nomenclature

STANFORD UNIVERSITY, CALIFORNIA
PUBLISHED BY THE UNIVERSITY
1920

STANFORD UNIVERSITY
PRESS

INTRODUCTORY NOTE

The present memoir is the fourth and concluding part of a catalogue of generic names applied to fishes subsequent to the establishment of the Binomial or Linnæan system of nomenclature, which dates from January 1, 1758.

It covers the late modern period in Ichthyology, signalized especially by explorations of the deep sea, of fossil beds, and of the darker continents. The unexampled explorations of Eigenmann in South America belong to this period, as also the records of Boulenger of the fishes of South Africa and the varied researches of Regan in the rich material of the British Museum. In this period the fauna of Australia, Japan, and Siberia have been critically and successfully studied. Our knowledge of fossil fishes is assuming definite form through the work of Woodward, Zittel, Hay, and others who have given Palæontology a constructive turn.

At the end of this period is recorded the death (December 10, 1919) of the veteran ichthyologist, Franz Steindachner, of Vienna, whose excellent papers mark the years from 1859 to 1915.

The present writer, as a life-long teacher of Biology, may be pardoned a personal reference. Himself a student of Agassiz and Gill of the earlier periods, he has had the honor of being also a friend, to some extent, a *protégé*, of Baird, Günther, Vaillant, Lütken, Hilgendorf, and Cope. In addition he has numbered among his own students many of those active in systematic ichthyology during the late modern period.

Among these are Gilbert, Eigenmann, Evermann, Bollman, Snyder, Starks, Jenkins, Meek, Fowler, Hubbs, Seale, Richardson (R. E.), Oshima, Abbott, Burke, Brayton, Cramer, Culver, Davis (B. M.), Fesler, Fordice, Gilbert (J. Z.), Goss, Greeley, Heller, Herre, Kirsch, McGregor, Pierson, Metz, Rutter, Snodgrass, Swain, Thoburn (W. W.), Thompson (W. F.), Weymouth, Williams (T. M.), Otaki (K.), and Woolman.

It is a pleasure to repeat my acknowledgments to the naturalists mentioned in Part III, as having given valuable assistance. I am also indebted to Arthur W. Henn of the American Museum, for looking up obscure names. My thanks are especially due to Masamitsu Oshima for the arrangement of the generic names given in the *Zoological Record.*

David Starr Jordan.

Stanford University, California
July 25, 1920; Issued August 15, 1920.

THE GENERA OF FISHES

PART IV

1881

1329. BEAN (1881). *Descriptions of New Fishes from Alaska and Siberia.* Proc. U. S. Nat. Mus., 1881, IV, 144–159.

TARLETON HOFFMAN BEAN.

Ptilichthys Bean, 157; orthotype P. GOODEI Bean.

1330. BEAN (1881). *Notes on a Collection of Fishes Made by Captain Henry E. Nichols, U. S. N., in British Columbia and Southern Alaska.* Proc. U .S. Nat. Mus., 1881, IV, 436-474.

TARLETON HOFFMAN BEAN.

Delolepis Bean, 465; orthotype D. VIRGATUS Bean.

1331. COPE (1881). *A New Genus of Catostomidæ (Lipomyzon).* American Naturalist, XV (January, 1881).

EDWARD DRINKER COPE.

Lipomyzon Cope, 59; orthotype CHASMISTES BREVIROSTRIS Cope.

1332. DAVIS (1881). *On the Zoological Position of the Genus Petalorhynchus Ag., a Fossil Fish from the Mountain Limestone.* Rept. Brit. Assoc. Adv. Sci.

JAMES WILLIAM DAVIS.

Diodontopsodus Davis, 646; orthotype (PRISTODUS FALCATUS Ag.) (fossil). Replaces PRISTODUS Ag. (62), which until 1883 was a name only.

1333. DAVIS (1881). *On the Genera Ctenoptychius,* etc. Ann. Mag. Nat. Hist., VII.

JAMES WILLIAM DAVIS.

Ctenopetalus (Agassiz) Davis, 426; orthotype PETALODUS SERRATUS (Ag.) Owen. A synonym of CTENOPTYCHIUS Ag.

Harpacodus (Agassiz) Davis, 426; orthotype PETALODUS (Ag.) Owen (fossil). A synonym of CTENOPTYCHIUS Ag.

1334. DAVIS (1881). *On Anodontacanthus . . . Fossil Fishes from the Coal Measures.* Quart. Journ. Geol. Soc., XXXVII.

JAMES WILLIAM DAVIS.

Anodontacanthus Davis, 427; orthotype A. ACUTUS Davis (fossil). A synonym of ORACANTHUS Ag.

1335. GARMAN (1881). *New and Little Known Reptiles and Fishes in the Museum Collections.* Bull. Mus. Comp. Zool., VIII.

SAMUEL GARMAN.

Stypodon Garman, 90; orthotype S. SIGNIFER Garman.

1336. GILL (1881). *Record of Recent Scientific Progress: A Deep-sea Rockfish.* Ann. Rept. Smithsonian Inst. for 1880.

THEODORE GILL.

Sebastolobus Gill, 375; orthotype SEBASTES MACROCHIR Gthr.

1337. GÜNTHER (1881). *Account of the Zoological Collection Made During the Survey of H. M. S. Alert in the Straits of Magellan and on the Coast of Patagonia.* Proc. Zool. Soc. London, 2–141.

Melanostigma Günther, 20; orthotype M. GELATINOSUM Gthr.

1338. JORDAN & GILBERT (1881). *Notes on the Fishes of the Pacific Coast of the United States.* Proc. U. S. Nat. Mus., 1881.

DAVID STARR JORDAN; CHARLES HENRY GILBERT.

Polistotrema (Gill) Jordan & Gilbert, 30; orthotype GASTROBRANCHUS DOMBEY Cuv. = BDELLOSTOMA STOUTI Lockington. Also noted on page 18 by Jordan & Jouy.

1339. JORDAN & GILBERT (1881). *Description of Thirty-three New Species of Fishes from Mazatlan, Mexico.* Proc. U. S. Nat. Mus., IV.

DAVID STARR JORDAN; CHARLES HENRY GILBERT.

Etropus Jordan & Gilbert, 364; orthotype ETROPUS CROSSOTUS J. & G.

1340. JORDAN & GILBERT (1881). *Description of Nineteen New Species of Fishes from the Bay of Panama.* Bull. U. S. Fish Commission, I, for 1881.

DAVID STARR JORDAN; CHARLES HENRY GILBERT.

Cerdale Jordan & Gilbert, 332; orthotype C. IONTHAS J. & G.

1341. GORJANOVIC-KRAMBERGER (1881). *Studien über die Gattung Saurocephalus Harlan; ein Beitrag zur Neocom-Fischfauna der Insel Lesina.* Jahrb. Geol. Reichsanstalt Wien, XXXI.

DRAGUTIN GORJANOVIC-KRAMBERGER.

Solenodon Kramberger, 373; orthotype S. NEOCOMIENSIS Kramberger (fossil) = SAUROCEPHALUS LYCODON Kner. Regarded by Woodward as a synonym of ENCHODUS Ag., the name SOLENODON preoccupied; replaced by HOLCODON Kramberger, 1885.

1342. LOCKINGTON (1881). *Description of a New Genus and Species of Cottidæ.* Proc. U. S. Nat. Mus., 1881, 141–144.

WILLIAM NEALE LOCKINGTON.

Chitonotus Lockington, 141; orthotype C. MEGACEPHALUS Lockington.

1343. LUNEL (1881). *Liste de quelques espèces de poissons, nouvelles pour la faune de l'île Maurice.* Mém. Soc. Phys. Genève, XXVII, 266–387.

GODEFROY LUNEL.

Penetopteryx Lunel, 275; orthotype P. TÆNIOCEPHALUS Lunel.

1344. MACLEAY (1881). *Descriptive Catalogue of the Fishes of Australia.* Proc. Linn. Soc. New S. Wales, 1881. Also issued in two bound volumes.

WILLIAM MACLEAY.

Neopempheris Macleay, 517; orthotype N. RAMSAYI Macleay. A synonym of LEPTOBRAMA.

Teratorhombus Macleay, 126; orthotype T. EXCISICEPS Macleay. Said to be a synonym of PSEUDORHOMBUS Blkr.

Cainosilurus Macleay, 147; orthotype NEOSILURUS AUSTRALIS Castelnau. Substitute for NEOSILURUS Castelnau, preoccupied.

1345. MOREAU (1881). *Histoire naturelle des poissons de France.*

ÉMILE MOREAU (1823-1896).

Flesus Moreau, II, 301; orthotype PLEURONECTES FLESUS L.

1346. POEY (1881). *Peces.* (In *Apuntes para la fauna puerto-riqueña,* by Juan Gundlach. Ann. Soc. Española Hist. Nat. Madrid, X, 317–350.

Felipe Poey y Aloy.

Monosira Poey, 326; orthotype M. stahli Poey. A synonym of Amia Gronow or Apogon Lac.

1347. RZEHAK (1881). *Ueber das Vorkommen und die geologische Bedeutung der Clupeidengattung.* Brünn.

A. Rzehak.

Anaglyphus Rzehak, 79; orthotype A. insignis Rzehak (fossil).

Eupalæoniscus Rzehak, 79; orthotype Palæoniscum frieslebenensis Blainv. (fossil). An unexplained substitute for Palæoniscum Blainv.

1348. SMITH, R. (1881). *Description of a New Gobioid Fish (Othonopseos) from San Diego, California.* Proc. U. S. Nat. Mus., IV.

Rosa Smith (1859-) (afterwards Mrs. Carl. H. Eigenmann).

Othonops Rosa Smith, 19; orthotype O. eos Smith = Typhlogobius californiensis Steind. A synonym of Typhlogobius Steind.

1349. STEINDACHNER (1881). *Ichthyologische Beiträge.* X. Sitzb. Akad. Wiss. Wien, 1881, LXXXIII, 179–219.

Franz Steindachner.

Cyclopterichthys Steindachner, 192; orthotype C. glaber Steind. A synonym of Aptocyclus Pylaie.

Breitensteinia Steindachner, 213; orthotype B. insignis Steind.

1350. STEINDACHNER (1881). *Ichthyologische Beiträge.* XI. Sitzb. Akad. Wiss. Wien, LXXXIII, 393–408 (May 5, 1881).

Franz Steindachner.

Schedophilopsis Steindachner, 100; orthotype S. spinosus Steind. = Icosteus ænigmaticus Lockington. A synonym of Icosteus Lockington.

Parachela Steindachner, 404 (12); orthotype P. breitensteini Steind. *(Borneo).*

1351. THOMINOT (1881). *Sur deux genres nouveaux de poissons faisant partie de la famille des squamipinnes et rapportés d'Australie par J. Verreaux.* Bull. Soc. Philom. Paris, 1881, VII, sér. 8, 140-142.

Alexandre Thominot.

Tilodon Thominot, 140; orthotype T. australis Thominot.

Diodyxodon Thominot, 142; orthotype D. australis Thominot. Not Doydixodon Val.

1352. TRAQUAIR (1881). *Notice of New Fish-Remains from the Blackband Ironstone of Borough Lee, Near Edinburgh.* Geol. Mag., 1881, II, decade VIII, 34-37.

Ramsay Heatley Traquair.

Cynopodius Traquair, 35; orthotype C. crenulatus Traquair (fossil).

Euctenius Traquair, 36-334; logotype Ctenoptychius unilateralis Barkas (fossil).

Ganopristodus Traquair, 37; orthotype G. splendens Traquair (fossil). A synonym of Uronemus Ag.

1353. TRAQUAIR (1881). *Report on Fossil Fishes Collected by the Geological Survey of Scotland in Eskdale and Liddesdale.* Trans. Roy. Soc. Edinburgh, 1881, XXX, 15-71.

Ramsay Heatley Traquair.

Phanerosteon Traquair, 39; orthotype P. MIRABILE Traquair (fossil).
Holurus Traquair, 43; orthotype H. PARKI Traquair (fossil).
Canobius Traquair, 46; orthotype C. RAMSAYI Traquair (fossil).
Cheirodopsis Traquair, 56; orthotype C. GEIKIEI Traquair (fossil).
Tarrasius Traquair, 61; orthotype T. PROBLEMATICUS Traquair.

1354. TRAQUAIR (1881). *Notice of New Fish Remains from the Blackband Ironstone of Borough Lee, Near Edinburgh.* Geol. Mag., decade VIII, 491-494.
RAMSAY HEATLEY TRAQUAIR.
Cryphiolepis Traquair, 491; orthotype CŒLACANTHUS STRIATUS Traquair (fossil).

1355. VETTER (1881). *Die Fische aus dem lithographischen Schiefer im Dresdner Museum.* Mitt. Mus., IV, Dresden, 1881.
BENJAMIN VETTER (1848-1893).
Eusemius Vetter, 51; orthotype E. BEATÆ Vetter (fossil).
Diplolepis Vetter, 91; orthotype (SAUROPSIS LONGIMANUS Ag.) (fossil). A synonym of SAUROPSIS Ag., the name twice preoccupied.
Agassizia Vetter, 97; orthotype EUGNATHUS TITANIUS Wagner (fossil). Name twice preoccupied, replaced by ASTHENOCORMUS Woodw., 1895.
Lophiurus Vetter, 116; orthotype L. MINUTUS Vetter (fossil). A synonym of LIODESMUS Wagner.

1356. WHITEAVES (1881). *Some Remarkable Fossil Fishes from the Devonian Rocks of Scaumenac Bay, . . . Quebec . . .* Canadian Naturalist, X.
JOSEPH FREDERICK WHITEAVES (1835-1909).
Eusthenopleuron Whiteaves, 30; orthotype E. FOORDI Whiteaves (fossil).

1882

1357. BASSANI (1882). *Descrizioni dei pesci fossili di Lesina . . .*
FRANCESCO BASSANI.
Opsigonus (Kramberger) Bassani, 200; orthotype O. MEGALURIFORMIS Kramberger (fossil).

1358. BOGHDANOV (1882). *Sketch of the Expeditions and Natural History Investigations in the Aral-Caspian Region from 1720 to 1874.* (Not verified.)
MODEST NIKOLAEVICH BOGHDANOV (1841-1888).
Kessleria Boghdanov, II, 3; orthotype SCAPHIRHYNCHUS FEDTSCHENKOI Kessler. This generic name is rejected by L. S. Berg, as a nomen nudum, which received its first definition in Jordan's *Guide to the Study of Fishes,* II, 20, 1905. But Boghdanov's species, S. FEDTSCHENKOI Kessler, was described in 1872 and was a well known species. KESSLERIA should therefore be preferred to PSEUDOSCAPHIRHYNCHUS Nikolski.

1359. DÖDERLEIN (1882). *Ein Stomiatide aus Japan.* Arch. Naturg. (2), XLVIII, 26-31.
LUDWIG DÖDERLEIN (1855-).
Lucifer Döderlein, 26; orthotype L. ALBIPINNIS Döderlein.

1360. FACCIOLÀ (1882). *Note sui pesce del stretto di Messina.* X (part 1). 166-168. Naturalista Siciliano, I, for 1882.
LUIGI FACCIOLÀ.
Alepichthys Facciolà, 167; orthotype A. ARGYROGASTER Facciolà.

1361. GIGLIOLI (1882). *New and Very Rare Fish from the Mediterranean.* Naturalist, XXV.

ENRICO HILLYER GIGLIOLI.

Paradoxichthys Giglioli, 535; orthotype NOTACANTHUS RISSOANUS Giglioli. A synonym of POLYACANTHONOTUS.

Teratichthys Giglioli, 574; orthotype T. GARIBALDIANUS Giglioli. A synonym of POLYACANTHONOTUS Blkr.; name preoccupied in fossil fishes.

1362. GILL (1882). *Supplementary Note on the Pediculati.* Proc. U. S. Nat. Mus., V.

THEODORE GILL.

Lophiomus Gill, 552; orthotype LOPHIUS SETIGERUS Vahl.

1363. GOODE & BEAN (1882). *Reports on the Results of Dredging Under the Supervision of Alexander Agassiz, on the East Coast of the United States, During the Summer of 1880, by the U. S. Coast Survey Steamer Blake,* etc. Bull. Mus. Comp. Zool. Harvard College, 1882, X, 183-226.

GEORGE BROWN GOODE; TARLETON HOFFMAN BEAN.

Notosema Goode & Bean, 193; orthotype N. DILECTA Goode & Bean.
Chalinura Goode & Bean, 199; orthotype C. SIMULA Goode & Bean.
Barathrodemus Goode & Bean, 200; orthotype B. MANATINUS Goode & Bean.
Dicrolene Goode & Bean, 202; orthotype D. INTRONIGER Goode & Bean.
Lycodonus Goode & Bean, 208; orthotype L. MIRABILIS Goode & Bean.
Poromitra Goode & Bean, 214; orthotype P. CAPITO Goode & Bean.
Cyclothone Goode & Bean, 221; orthotype C. LUSCA Goode & Bean.

1364. GOODE & BEAN (1882). *Benthodesmus, a New Genus of Deep-sea Fishes, allied to Lepidopus.* Proc. U. S. Nat. Mus., 1882, V, 379-383.

GEORGE BROWN GOODE; TARLETON HOFFMAN BEAN.

Benthodesmus Goode & Bean, 380; orthotype LEPIDOPUS ELONGATUS Clarke.

1365. GOODE & BEAN (1882). *Descriptions of Twenty-five New Species of Fish from the Southern United States, and Three New Genera, Letharchus, Ioglossus, and Chriodorus.* Proc. U. S. Nat. Mus., 1882, V, 412-437.

GEORGE BROWN GOODE; TARLETON HOFFMAN BEAN.

Baiostoma Bean, 413; orthotype B. BRACHIALIS Bean. A synonym of ACHIRUS Lac.
Ioglossus Bean, 419; orthotype I. CALLIURUS Bean.
Chriodorus Goode & Bean, 431; orthotype C. ATHERINOIDES Goode & Bean.
Letharchus Goode & Bean, 436; orthotype L. VELIFER Goode & Bean.

1366. GUIMARAËS (1882). *Description d'un nouveau poisson de Portugal.* Jorn. Sci. Lisboa, VIII, for 1881 (1882).

ANTONIO ROBERTO GUIMARAËS.

Pseudohelotes Guimaraës, 222; orthotype P. GUENTHERI Capello (Ms.).

1367. HAY (1882). *On a Collection of Fishes from the Lower Mississippi.* Bull. U. S. Fish Comm., II, 57–75.

OLIVER PERRY HAY.

Tirodon Hay, 68; orthotype T. AMNIGENUS Hay.

1368. JORDAN (1882). *The Fishes of Ohio.* Rept. Geol. Surv. Ohio, IV.

DAVID STARR JORDAN.

Coccotis Jordan, 852; orthotype HYPSILEPIS COCCOGENIS Cope.
Erimystax Jordan, 858; orthotype LUXILUS DISSIMILIS Kirtland.

1369. JORDAN & GILBERT (1882). *Notes on Fishes Observed About Pensacola, Florida, and Galveston, Texas,* etc. Proc. U. S. Nat. Mus., V, 1882.

DAVID STARR JORDAN; CHARLES HENRY GILBERT.

Ioglossus (Bean) Jordan & Gilbert, 297; orthotype I. CALLIURUS Bean (description in detail on page 419).

1370. JORDAN & GILBERT (1882). *Notes on a Collection of Fishes from Charleston, South Carolina, With Descriptions of Three New Species.* Proc. U. S. Nat. Mus., 1882, V, 580-620.

DAVID STARR JORDAN; CHARLES HENRY GILBERT.

Querimana Jordan & Gilbert, 588; orthotype MYXUS HARENGUS Gthr.

Pneumatophorus Jordan & Gilbert, 593; orthotype SCOMBER PNEUMATOPHORUS De la Roche = SCOMBER COLIAS Gmelin.

1371. JORDAN & GILBERT (1882). *List of Fishes Now in the Museum of Yale College Collected by Prof. Frank H. Bradley at Panama,* etc. Proc. U. S. Nat. Mus., 1882.

DAVID STARR JORDAN; CHARLES HENRY GILBERT.

Emblemaria Jordan & Gilbert, 627; orthotype E. NIVIPES J. & G.

1372. JORDAN & GILBERT (1882). *A Review of the Siluroid Fishes Found on the Pacific Coast of Tropical America,* etc. Bull. U. S. Fish Comm., II.

DAVID STARR JORDAN; CHARLES HENRY GILBERT.

Cathorops Jordan & Gilbert, II, 54; orthotype ARIUS HYPOPHTHALMUS Steind.

1373. JORDAN & GILBERT (1882). *Synopsis of the Fishes of North America.* Bull. U. S. Nat. Mus., 1882 (September), XVI, 1-1018.

DAVID STARR JORDAN; CHARLES HENRY GILBERT.

Creolus Jordan & Gilbert, XXXVI; orthotype SERRANUS FURCIFER J. & G. Substitute for BRACHYRHINUS Gill, preoccupied. Withdrawn in the text, being a synonym of PARANTHIAS Guich.

Trycherodon (Forbes) Jordan & Gilbert, 247; orthotype T. MEGALOPS Forbes. A synonym of OPSOPŒDUS Hay.

Euthynnus (Lütken) Jordan & Gilbert, 429; orthotype THYNNUS PELAMYS L.

Bothragonus (Gill) Jordan & Gilbert, 728; orthotype HYPSAGONUS SWANI Steind.

Isesthes Jordan & Gilbert, 757; orthotype BLENNIUS GENTILIS Grd.; a synonym of HYPSOBLENNIUS Gill.

Isopsetta (Lockington) Jordan & Gilbert, 832; orthotype LEPIDOPSETTA ISOLEPIS Lockington.

Xenistius Jordan & Gilbert, 920; orthotype XENICHTHYS CALIFORNIENSIS Steind.

1374. GORJANOVIC-KRAMBERGER (1882). *Die jüngsttertiäre Fischfauna Croatiens.* Parts I-II. Beitr. Palæont. Oesterr.-Ungarn, 1882, II, 86-135 (*ibid.* 1883, II, 65-85).

DRAGUTIN GORJANOVIC-KRAMBERGER.

Metoponichthys Kramberger, 104; orthotype M. LONGIROSTRIS Kramberger (fossil). Same as PROANTIGONIA Kramberger, and having page priority.

Proantigonia Kramberger, 131; orthotype P. RABDOBOJANA Kramberger (fossil). A synonym of METOPONICHTHYS.

1375. MACLEAY (1882). *Notes on the Pleuronectidæ of Port Jackson, With Descriptions of Two Hitherto Unobserved Species.* Proc. Linn. Soc. New S. Wales, 1882, VII, 11-15.

WILLIAM MACLEAY.

Lophorhombus Macleay, 14; orthotype L. CRISTATUS. A synonym of LOPHONECTES Gthr.

1376. QUENSTEDT (1882). *(Fossile Fische.)* Württ. Jahresh. XXXVIII.
FRIEDRICH AUGUST VON QUENSTEDT.

Bdellodus Quenstedt, 137; orthotype B. BOLLENSIS Quenstedt (fossil).

1377. SAUVAGE (1882). *Étude sur les poissons des Faluns de Brétagne.* Mém. Soc. Sci. Nat. Saône-et-Loire, IV.
HENRI ÉMILE SAUVAGE.

Stylodus Sauvage, IV, 77; orthotype S. LEBESCONTEI Sauvage (fossil).

1378. SAUVAGE (1882). *Description de quelques poissons de la collection du museum d'histoire naturelle.* Bull. Soc. Philom. Paris (7), VI, 168-176.
HENRI ÉMILE SAUVAGE.

Saccostoma Sauvage, 171; orthotype S. GULOSUS Sauvage. Name preoccupied, replaced by CHASMIAS Jordan & Snyder; this also preoccupied and replaced by CHASMICHTHYS Jordan & Snyder.

Cosmochilus Sauvage, 180; orthotype C. HARMANDI Sauvage.

1379. STEINDACHNER (1882). *Ichthyologische Beiträge.* XII. Sitzb. Akad. Wiss. Wien, LXXXVI, 61–82.
FRANZ STEINDACHNER.

Pachychilon Steindachner, 71; orthotype SQUALIUS PICTUS (Heckel & Kner).

1380. VAILLANT (1882). *Sur un poisson des grandes profondeurs de l'Atlantique, l'Eurypharynx pelecanoides.* Comptes Rendus Acad. Sci. Paris, 1882, 1226-1228.
LÉON LOUIS VAILLANT.

Eurypharynx Vaillant, 1226; orthotype E. PELECANOIDES Vaillant.

1883

1381. BEAN (1883). *Notes on Collection of Fishes Made in 1882 and 1883 by Capt. Henry E. Nichols, U. S. N., in Alaska and British Columbia,* etc. Proc. U. S. Nat. Mus., VI, 353-362.
TARLETON HOFFMAN BEAN.

Prionistius Bean, 355; orthotype P. MACELLUS Bean.

1382. COPE (1883). *A New Chondostrean (Crossopholis magnicaudatus) from the Eocene.* Amer. Naturalist, 1883, XVII, 1152–1153.
EDWARD DRINKER COPE.

Crossopholis Cope, 1152; orthotype C. MAGNICAUDATUS Cope (fossil).

1383. COPE (1883). *On the Fishes of the Recent and Pliocene Lakes of the Western Part of the Great Basin and of the Idaho Pliocene Lake.* Proc. Acad. Nat. Sci. Phila., 134-166.
EDWARD DRINKER COPE.

Siphateles Cope, 146; orthotype S. VITTATUS Cope. Young individual of a genus apparently valid, confused with MYLOLEUCUS Cope.

1384. COPE (1883). *On Some Vertebrata from the Permian of Illinois.* Proc. Acad. Nat. Sci. Phila., 108–110.
EDWARD DRINKER COPE.

Didymodus Cope, 108; orthotype DIPLODUS GIBBOSUS Ag. (fossil). Substitute for DIPLODUS Ag., preoccupied. DIDYMODUS is regarded as preoccupied by DIDYMODON and again replaced by DICRANODUS Garman. But there are apparently older synonyms. These teeth probably belong to the forms called PLEURACANTHUS or ORACANTHUS, known from fin-spines only. But it is impossible to coördinate the teeth with the spines, hence the occurrence of two parallel sets of generic names.

Thoracodus Cope, 108; orthotype T. EMYDINUS Cope (fossil). A synonym of JANASSA Münster.

1385. COPE (1883). *Fourth Contribution to the History of the Permian Formation of Texas.* Proc. Amer. Phila. Soc., XX, 628-629.

EDWARD DRINKER COPE.

Gnathorhiza Cope, 629; orthotype G. SERRATA Cope (fossil).

1386. COPE (1883). *On a New Extinct Genus of Percidæ from Dakota Territory.* Amer. Journ. Sci., XXV.

EDWARD DRINKER COPE.

Plioplarchus Cope, 416; orthotype P. WHITII Cope (fossil).

1387. COPE (1883). *Permian Fishes and Reptiles.* Proc. Acad. Nat. Sci. Phila.

EDWARD DRINKER COPE.

Ectosteorhachis Cope, 69; orthotype E. CICERONIUS Cope.

1388. DAMES (1883). *Ueber eine tertiäre Wirbelthier-Fauna von der westlichen Insel des Birket el Qurun im Fajum (Aegypten).* Sitzb. Akad. Wiss. Berlin, VI, 129-152.

WILHELM BARNIM DAMES.

Propristis Dames, 136; orthotype P. SCHWEINFÜRTHI Dames (fossil).

Progymnodon Dames, 148; orthotype P. HILGENDORF Dames (fossil). An extinct analogue of DIODON L.

1389. DAVIS (1883). *On the Fossil Fishes of the Carboniferous Limestone Series of Great Britain.* Scient. Trans. Roy. Dublin Soc., 1883, II, ser. 1, 327-600.

JAMES WILLIAM DAVIS.

Compsacanthus Davis, 354; orthotype C. CARINATUS Davis (fossil).

Lispacanthus Davis, 359; logotype L. GRACILIS Davis (fossil).

Gnathacanthus Davis, 363; logotype G. TRIANGULARIS (fossil).

Cladacanthus (Agassiz) Davis, 364; orthotype C. PARADOXUS Ag. (fossil) (printed as name only in *Poissons Fossiles,* III, 176, 1843). A synonym of ERISMACANTHUS M'Coy (1848).

Chalazacanthus Davis, 370; orthotype C. VERRUCOSUS Davis (fossil).

Carcharopsis (Agassiz) Davis, 381; orthotype C. PROTOTYPUS Ag. (fossil) (name only in 1843). A synonym of DICRENODUS Romanowsky.

Glyphanodus Davis, 386; orthotype G. TENUIS Davis (fossil). A synonym of PETALODUS.

Rhamphodus Davis, 402; orthotype R. DISPAR Davis.

Diclitodus Davis, 410; orthotype D. SCITULUS Davis (fossil).

Tomodus (Agassiz) Davis, 446; orthotype T. CONVEXUS Morris & Roberts (fossil).

Copodus (Agassiz) Davis, 464; orthotype C. CORNUTUS Davis (fossil).

Lobodus (Agassiz) Davis, 468; orthotype L. PROTOTYPUS Ag. (fossil). A synonym of COPODUS (Ag.) Davis.

Mesogomphus (Agassiz) Davis, 470; orthotype M. LINGUA Ag. (fossil). A synonym of COPODUS.

Rhymodus (Agassiz) Davis, 473; orthotype R. TRANSVERSUS Ag. (fossil). A synonym of COPODUS.

Pinacodus (Agassiz) Davis, 476; orthotype P. GONOPLAX Ag. (fossil). A synonym of COPODUS.

Characodus (Agassiz) Davis, 474; orthotype C. ANGULATUS Ag. (fossil) (name only, printed by Morris & Roberts, 1862). Name preoccupied; a synonym of COPODUS.

Dimyleus (Agassiz) Davis, 478; orthotype D. WOODI (Ag.) Davis (fossil).

Mylacodus Davis, 480; orthotype M. QUADRATUS Davis (fossil). A synonym of COPODUS.

Homalodus Davis, 484; logotype H. TRAPEZIFORMIS Davis (fossil). A synonym of PSAMMODUS Ag.

Petalodopsis Davis, 499; orthotype P. TRIPARTITUS Davis (fossil). Name preoccupied; a synonym of CTENOPTYCHIUS.

Pristodus (Agassiz) Davis, 519; orthotype P. FALCATUS Davis (fossil).

Phoderacanthus Davis, 534; orthotype P. GRANDIS Davis (fossil).

1390. DE VIS (1883). *Descriptions of Some New Queensland Fishes.* Proc. Linn. Soc. New S. Wales, 1883, VII, 367–371.

CHARLES W. DE VIS.

Cleidopus De Vis, 367; orthotype C. GLORIA-MARIS De Vis. A synonym of MONOCENTRIS Bl. & Schn.

1391. FACCIOLÀ (1883). *Note sui pesci dello stretto di Messina.* Naturalista Siciliano, 1883, II, 145–148.

LUIGI FACCIOLÀ.

Pelopsia Facciolà, 145; orthotype P. CANDIDA Facciolà. Said to be the young of CHLOROPHTHALMUS Ag.

1392. GAUDRY (1883). *Les enhcaînements du monde animal dans les temps géologiques. Fossiles primaires.*

JEAN ALBERT GAUDRY (1827-1908).

Megapleuron Gaudry, 239; orthotype M. ROCHEI Gaudry (fossil). A synonym of SAGENODUS.

1393. GIGLIOLI (1883). *Intorno a due nuovi pesci dal golfo di Napoli.* Zool. Anz., 1883, VI, 397–400.

ENRICO HILLYER GIGLIOLI.

Bellottia Giglioli, 399; orthotype B. APODA Giglioli.

1394. GIGLIOLI (1883). *New and Very Rare Fish from the Mediterranean.* (Part 2.) Nature.

ENRICO HILLYER GIGLIOLI.

Bathyophilus Giglioli, 199; orthotype B. NIGERRIMUS Giglioli.

1395. GILL (1883). *(Pediculate Fishes.)* Forest & Stream, November 8.

THEODORE GILL.

Cryptopsaras Gill, November 8, 1883; orthotype C. COUESI Gill.

Typhlopsaras Gill, 284; orthotype T. SHUFELDTI Gill. Apparently a synonym of MANACALIAS Gill.

1396. GILL (1883). *Diagnosis of New Genera and Species of Deep-sea Fish-like Vertebrates.* Proc. U. S. Nat. Mus., VI, 253–260.

THEODORE GILL.

Bathymyzon Gill, 254; orthotype PETROMYZON BAIRDI Gill.
Histiobranchus Gill, 255; orthotype H. INFERNALIS Gill.
Hyperchoristus Gill, 256; orthotype H. TANNERI Gill.
Sigmops Gill, 256; orthotype S. STIGMATICUS Gill.
Stephanoberyx Gill, 258; orthotype S. MONÆ Gill.
Plectromus Gill, 257; orthotype P. SUBORBITALIS Gill.
Caulolepis Gill, 258; orthotype C. LONGIDENS Gill.
Bassozetus Gill, VI, 259; orthotype B. NORMALIS Gill.

1397. GILL & RYDER (1883). *Diagnosis of New Genera of Nemichthyoid Eels.* Proc. U. S. Nat. Mus., 1883, VI, 260–262.

THEODORE GILL; JOHN ADAM RYDER (1852–95).

Labichthys Gill & Ryder, 261; orthotype L. CARINATUS Gill & Ryder.
Spinivomer Gill & Ryder, 261; orthotype S. GOODEI Gill & Ryder.
Serrivomer Gill & Ryder, 260; orthotype S. BEANI Gill & Ryder.

1398. GILL & RYDER (1883). *On the Anatomy and Relations of the Eurypharyngidæ.* Proc. U. S. Nat. Mus., 1883, VI, 262–273.

THEODORE GILL; JOHN ADAM RYDER.

Gastrostomus Gill & Ryder, 271; orthotype G. BAIRDI Gill & Ryder.

1399. GOODE (1883). *The Generic Names Amitra and Thyris Replaced.* Proc. U. S. Nat. Mus., VII.

GEORGE BROWN GOODE.

Monomitra Goode, 109; orthotype AMITRA LIPARINA Goode. Substitute for AMITRA Goode, 1880, regarded as preoccupied by AMITRUS Schönherr, a beetle.
Delothyris Goode, 109; orthotype THYRIS PELLUCIDUS Goode. Substitute for THYRIS Goode, preoccupied; larval form of MONOLENE Goode.

1400. JORDAN & GILBERT (1883). *Notes on the Nomenclature of Certain North American Fishes.* Proc. U. S. Nat. Mus., VI.

DAVID STARR JORDAN; CHARLES HENRY GILBERT.

Scytaliscus Jordan & Gilbert, 111; orthotype SCYTALINA CERDALE J. & G. Substitute for SCYTALINA, regarded as preoccupied by SCYTALINUS.

1401. KAYSER (1883). *Richthofen's Beiträge zur Palæontologie von China.* Berlin, 1883.

FRIEDRICH HEINRICH EMANUEL KAYSER (1845–).

Leptodus Kayser, 161; orthotype L. RICHTHOFENI Kayser (fossil).

1402. KOENEN (1883). *Beiträge zur Kenntniss der Placodermen des Norddeutschen Oberdevons.* Abh. Ges. Wiss. Gottingen, XXX.

ADOLF VON KOENEN.

Brachydirus Koenen, 26; orthotype COCCOSTEUS INFLATUS Koenen (fossil).
Anomalichthys Koenen, 38; orthotype A. SCABER Koenen (fossil).

1403. MACLEAY (1883). *On a New and Remarkable Fish of the Family Mugilidæ.* Proc. Linn. Soc. New S. Wales, VIII, 2–6.

WILLIAM MACLEAY.

Æschrichthys Macleay, 5; orthotype A. GOLDIEI Macleay.

1404. MACLEAY (1883). *Contributions to a Knowledge of the Fishes of New Guinea,* No. 4. Proc. Linn. Soc. New S. Wales, VIII, 252–282.

WILLIAM MACLEAY.

Tetracentrum Macleay, 256; orthotype T. APOGONOIDES Macleay.

1405. NEWBERRY (1883). *Some Interesting Remains of Fossil Fishes Recently Discovered.* Trans. N. Y. Acad. Sci., II, 144–147.

JOHN STRONG NEWBERRY.

Mylostoma Newberry, 145; logotype M. TERRELLI Newberry.

1406. ST. JOHN & WORTHEN (1883). *Descriptions of Fossil Fishes; a Partial Revision of the Cochliodonts and Psammodonts, Including Notices of Miscellaneous Material Acquired from the Carboniferous formations of the United States.* Geol. Surv. Ill., VII, 55–264.

ORESTES H. ST. JOHN; A. H. WORTHEN.

Tæniodus St. John & Worthen, 75; logotype T. REGULARIS St. John & Worthen (fossil). A synonym, as here restricted, of PSEPHODUS Ag.

Stenopterodus St. John & Worthen, 102; logotype S. PLANUS St. John & Worthen (fossil).

Vaticinodus St. John & Worthen, 82; logotype V. VETUSTUS St. John & Worthen (fossil).

Chitonodus St. John & Worthen, 112; logotype C. SPRINGERI St. John & Worthen (fossil).

Deltodopsis St. John & Worthen, 160; logotype D. ANGUSTUS St. John & Worthen (fossil).

Orthopleurodus St. John & Worthen, 192; logotype O. CONVEXUS St. John & Worthen (fossil).

Acondylacanthus St. John & Worthen, 241; logotype A. RECTUS St. John & Worthen (fossil).

Eunemacanthus St. John & Worthen, 246; orthotype CTENACANTHUS COSTATUS Newberry & Worthen (fossil). A synonym of CTENACANTHUS.

Gymnatacanthus St. John & Worthen, 249; logotype G. RUDIS St. John & Worthen (fossil).

Batacanthus St. John & Worthen, 253; orthotype B. NECIS St. John & Worthen (fossil).

Pnigeacanthus St. John & Worthen, 259; orthotype P. TRIGONALIS St. John & Worthen (fossil).

1407. SAUVAGE (1883). *Note sur les poissons du muschelkalk de Pontpierre (Lorraine).* Bull. Soc. Geol. (3), XI, 492–496.

HENRI ÉMILE SAUVAGE

Meristodon Sauvage, 480; orthotype M. JURENSIS Sauvage (fossil).

Paralates Sauvage, 485; orthotype P. BLEICHERI Sauvage (fossil).

Sparosoma Sauvage, 487; orthotype S. OVALIS Sauvage (fossil). Preoccupied by SPARISOMA Sw.

1408. SAUVAGE (1883). *Sur une collection de poissons recuellis dans le lac Biwako (Japon) par M. F. Steenackers.* Bull. Soc. Philom., Paris, 1883, ser. 7, VII, 144–150.

HENRI ÉMILE SAUVAGE.

Tribolodon Sauvage, 149; orthotype T. PUNCTATUM Sauvage.

1409. SAUVAGE (1883). *Descriptions de quelques poissons de la collection du museum d'histoire naturelle.* Bull. Soc. Philom., Paris, 1883, ser. 7, VII, 156–161.

HENRI ÉMILE SAUVAGE.

Petroscirtes Sauvage, 158; orthotype P. GERMANI Sauvage. Name preoccupied by PETROSCIRTES Rüppell.

1410. STEINDACHNER & DÖDERLEIN (1883). *Beiträge zur Kenntniss der Fische Japans.* Part 1. Denkschr. Akad. Wiss. Wien, 1883, XLVII, 1–34.

FRANZ STEINDACHNER; LUDWIG DÖDERLEIN.

Melanostoma Steindachner & Döderlein, 5; orthotype M. JAPONICUM Steindachner & Döderlein. Name preoccupied; replaced by SYNAGROPS Gthr., 1887.

Neoditrema Steindachner & Döderlein, 32; orthotype N. RANSONNETI Steindachner & Döderlein.

Cypselichthys Steindachner & Döderlein, 14; orthotype C. JAPONICUS Steindachner & Döderlein = LABRACOGLOSSA ARGENTIVENTRIS Peters. A synonym of LABRACOGLOSSA Peters.

Paracirrhites Steindachner & Döderlein, 25; orthotype P. JAPONICUS Steindachner & Döderlein. Name preoccupied; replaced by ISOBUNA Jordan, 1907.

Doderleinia Steindachner, 29; orthotype D. ORIENTALIS Steindachner & Döderlein.

Acanthocephalus (Döderlein) Steindachner, 29; orthotype DODERLEINIA ORIENTALIS Steind. A manuscript synonym of DODERLEINIA, noted in passing, being preoccupied.

Labracopsis Döderlein, 235; orthotype L. JAPONICUS Döderlein.

1411. STEINDACHNER & DÖDERLEIN (1883). *Beiträge zur Kenntniss der Fische Japans.* Part 2. Denkschr. Akad. Wiss. Wien, 1883, XLVIII, 1–40.

FRANZ STEINDACHNER; LUDWIG DÖDERLEIN.

Argo Döderlein, 34; orthotype A. STEINDACHNERI Döderlein. A synonym of TARACTES Lowe.

Pentaceropsis Steindachner & Döderlein, 13; logotype HISTIOPTERUS RECURVIROSTRIS Rich.

Malakichthys Döderlein, 32; orthotype M. GRISEUS Döderlein. Replaces SATSUMA Smith & Pope.

1412. THOMINOT (1883). *Notice sur un poisson de genre nouveau appartenant à la famille des Sparidés.* Bull. Soc. Philom., Paris, VII.

ALEXANDRE THOMINOT.

Parhaplodactylus Thominot, 140; orthotype HAPLODACTYLUS LOPHODON Gthr.

1413. THOMINOT (1883). *Note sur le genre Aplodon, poisson de la famille des Sparidés voisin des girelles.* Bull. Sci. Philom., Paris, VII.

ALEXANDRE THOMINOT.

Aplodon (Duméril) Thominot, 141; logotype A. MARGARITIFERUM Duméril. Mss. also written HAPLODON; both forms preoccupied. Said to be a synonym of INCISIDENS Gill.

1414. TRAUTSCHOLD (1883). *Ueber Edestus und einige andere Fischreste des moskauer Bergkalks.* Bull. Soc. Imp. Nat. Moscou, LVII, pt. 2, 160–174.

HERMANN VON TRAUTSCHOLD.

Euacanthus Trautschold, 172; orthotype E. MARGARITATUS Trautschold (fossil).

1884.

1415. CLAYPOLE (1884). *Preliminary Note on Some Fossil Fishes Recently Discovered in the Silurian Rocks of North America.* Amer. Naturalist, XVIII, 1222–1226.

EDWARD WALLER CLAYPOLE (1835–1901).

Palæaspis Claypole, 1224; orthotype P. AMERICANA Claypole (fossil).

1416. DAVIS (1884). *On some Remains of Fossil Fishes from the Yoredale Series at Leyburn in Wenslaydale.* Quart. Journ. Geol. Soc., 1884, XL, 614–634.

JAMES WILLIAM DAVIS.

Gomphacanthus Davis, 618; orthotype G. ACUTUS Davis (fossil).

Hemicladodus Davis, 620; orthotype H. UNICUSPIDATUS Davis (fossil). An unidentified fragment of a tooth.

Astrabodus Davis, 630; orthotype A. EXPANSUS Davis (fossil). A synonym of PSAMMODUS.

Echinodus Davis, 631; orthotype E. PARADOXUS Davis (fossil).

Cyrtonodus Davis, 631; orthotype C. GIBBUS Davis (fossil).

Diplacodus Davis, 633; orthotype D. BULBOIDES Davis (fossil).

1417. DAVIS (1884). *Description of a New Genus of Fossil Fishes from the Lias.* Ann. Mag. Nat. Hist., ser. 5, XIII, 448–453.

JAMES WILLIAM DAVIS.

Lissolepis Davis, 449; orthotype L. SERRATUS Davis (fossil).

1418. DE VIS (1884). *Descriptions of New Genera and Species of Australian Fishes.* Proc. Linn. Soc., New S. Wales, for 1883 (1884), VIII, 283–289.

CHARLES W. DE VIS.

Dactylophora De Vis, 284; orthotype D. SEMIMACULATA De Vis. Same as PSILOCRANIUM Macleay of the same year.

Leme De Vis, 286; orthotype L. MORDAX De Vis.

1419. DE VIS (1884). *Fishes from South Sea Islands.* Proc. Linn. Soc., New S. Wales, VIII, 445–457.

CHARLES W. DE VIS.

Harpage De Vis, 447; orthotype H. ROSEA De Vis.

Nesiotes De Vis, 453; orthotype N. PURPURASCENS De Vis. A synonym of PSEUDOCHROMIS Rüppell.

Trachycephalus De Vis, 455; orthotype T. BANKANIENSIS De Vis. Name preoccupied; a synonym of AMPHIPRIONICHTHYS Blkr., 1855.

1420. FACCIOLÀ (1884). *Note sui pesci dello stretto di Messina.* Naturalista Sicili., III, 111–114.

LUIGI FACCIOLÀ.

Hypsirhynchus Facciolà, 112; orthotype H. HEPATICUS Facciolà.

1421–1422. FILHOL (1884). *Explorations sous-marines: voyage du Talisman.* La Nature, 1884, 182–186.

HENRI FILHOL (1843——).

Neostoma Filhol, 184; orthotype N. BATHYPHILUM Filhol.

Eustomias Filhol, 185; orthotype E. OBSCURUS Filhol.

1423. GARMAN (1884). *New Sharks: Chlamydoselachus anguineus and Heptranchias pectorosus.* Bull. Essex Instit., 1884, XVI, 3–15.

SAMUEL GARMAN.

Chlamydoselachus Garman, 8; orthotype C. ANGUINEUS Garman.

1424. GILBERT (1884). *A List of Fishes Collected in the East Fork of the White River, Indiana, with Descriptions of Two New Species.* Proc. U. S. Nat. Mus., VII, 199–205.

CHARLES HENRY GILBERT.

Hypargyrus (Forbes) Gilbert, 200; orthotype HYBOPSIS TUDITANUS Cope. A synonym of CERATICHTHYS Baird (CLIOLA Grd.).

Serraria Gilbert, 205; orthotype HADROPTERUS SCIERUS Swain.

1425. GILL (1884). *On the Anacanthine fishes.* Proc. Acad. Nat. Sci., Phila., 1884.

THEODORE GILL.

Lycenchelys Gill, 180; orthotype LYCODES MURÆNA Collett.

Lycocara Gill, 180; orthotype OPHIDIUM PARRII Ross. A substitute for URONECTES Gthr., preoccupied.

1426. GILL (1884). *Synopsis of the genera of the superfamily Teuthidoidea* (families Teuthididæ and Siganidæ). Proc. U. S. Nat. Mus., VII, 1884.

THEODORE GILL.

Ctenochætus Gill, 279; orthotype ACANTHURUS STRIGOSUS Bennett. Replaces CTENODON (Bon.) Klunzinger, preoccupied.

Colocopus Gill, 279; orthotype C. LAMBDURUS Gill = ACANTHURUS HEPATUS Bl. & Schn., not TEUTHIS HEPATUS L.

1427. GILL (1884). *Synopsis of the Plectognath Fishes.* Proc. U. S. Nat. Mus., VII.

THEODORE GILL.

Masturus Gill, 425; orthotype ORTHAGORISCUS OXYUROPTERUS Blkr.

1428. GILL (1884). (*Derichthys,* etc.) American Naturalist, XVIII.

THEODORE GILL.

Derichthys Gill, 433; orthotype D. SERPENTINUS Gill.

Acanthochænus Gill, 433; orthotype A. LUTKENI Gill. Perhaps a synonym of STEPHANOBERYX Gill.

1429. GÜRICH (1884). (*Eupleurodus*) Zeitschr. Deutsch. Geol. Ges., XXXVI.

GEORG GÜRICH (1859–).

Eupleurodus Gürich, 142; orthotype E. SULCATUS Gürich (fossil) = AMPHALODUS CHORZOWIENSIS Meyen. A synonym of ASTERODON Münster.

1430. JORDAN & SWAIN (1884). *A Review of the American Species of Marine Mugilidæ.* Proc. U. S. Nat. Mus., VII, 261–275.

DAVID STARR JORDAN; JOSEPH SWAIN (1857–).

Liza Jordan & Swain, 261; orthotype MUGIL CAPITO Cuv.

1431. JORDAN & SWAIN (1884). *A Review of the Species of the Genus Hæmulon.* Proc. U. S. Nat. Mus., VII.

DAVID STARR JORDAN; JOSEPH SWAIN

Lythrulon Jordan & Swain, 284; orthotype HÆMULON FLAVIGUTTATUS Gill.

1432. KLUNZINGER (1884). *Die Fische des Rothen Meeres. Eine kritische Revision mit Bestimmungs-Tabellen. I. Theil. Acanthopteri veri Owen,* Stuttgart, 133.

CARL BENJAMIN KLUNZINGER.

Hyposerranus Klunzinger, 3; logotype SERRANUS MORRHUA Cuv. & Val. A substitute for EPINEPHELUS Bloch. because not originally clearly defined. A synonym of EPINEPHELUS Bloch, as restricted. "Bleeker nent die SERRANUS jetzt EPINEPHELUS. Diese Sucht, alte Namen hervorzusuchen, halte ich für verfehlt, wenigstens in fällen wie hier . . . Bloch hat allerdings verschiedene Arten dieser Gattung unter EPINEPHELUS aufgeführt, die Gattungsdiagnose ist aber nichtssagend" (Klunzinger). But relatively few original diagnoses are adequate until amended, and to give a new name with each new definition would lead to endless confusion. In fact, much of the chaos which rules are intended to remove is due to the method advocated by Klunzinger and justified by rule 12 of the British Association (1865, 1869), now superseded, whereby a name not fully defined should be changed if its meaning is not clearly expressed at first.

Anisochætodon Klunzinger, 54; logotype CHÆTODON AURIGA. A substitute for LINOPHORA Kaup and OXYCHÆTODON Blkr., the definition being changed. A synonym of LINOPHORA Kaup.

Ctenodon (Bonaparte) Klunzinger, 85; orthotype ACANTHURUS STRIGOSUS Bennett. Name preoccupied; replaced by CTENOCHÆTUS Gill, 1884.

Hypocaranx Klunzinger, 92; logotype SCOMBER SPECIOSUS Bloch. A synonym of GNATHANODON Blkr. Under the new name of HYPOCARANX, Klunzinger includes Bleeker's genera, HEMICARANX, GNATHANODON, SELAROIDES, and URASPIS. His conception of a genus is that of a compartment of species, its name to be changed whenever the walls are altered. But in modern nomenclature a genus is a group of species clustered around a type which may be arbitrarily chosen. The oldest type-name included (unless preoccupied) gives its name to the whole. HYPOCARANX is inadmissible, being merely a synonym of GNATHANODON Blkr., its first species mentioned (SPECIOSUS) being the type of GNATHANODON. The same remarks apply to PSEUDOSERRANUS Klunzinger (1870), a substitute for the earlier names SERRANUS and VARIOLA.

1433. LANKESTER (1884). *Report on Fragments of Fossil Fishes from the Paleozoic Strata of Spitzbergen.* Svensk. Vet. Akad. Handl., 1884, XX, 1–7.

EDWIN RAY LANKESTER.

Lophostracon Lankester, 5; orthotype, L. SPITZBERGENSE Lankester (fossil).

1434. MACLEAY (1884) *On a New Genus of Fishes from Port Jackson.* Proc. Linn. Soc., New S. Wales, VIII, 439–443.

WILLIAM MACLEAY.

Psilocranium Macleay, 439; orthotype P. COXII Macleay. Same as DACTYLOPHORA De Vis, of the same year. McCulloch gives the latter name precedence.

1435. SAUVAGE (1884). *Contribution a la faune ichthyologique du Tonkin.* Bull. Soc. Zool. France, 1884, VII, ser. 7, 150–155.

HENRI ÉMILE SAUVAGE.

Gymnognathus Sauvage, 214; orthotype G. HARMANDI Sauvage. Name preoccupied; gives place to ASPIDOLUCIUS Berg.

1436. SAUVAGE (1884). *Sur un siluroide de l'île de la Réunion.* Bull. Soc. Philom., Paris, 1884, VII, sér. 8, 147–148.

HENRI ÉMILE SAUVAGE.

Laimumena Sauvage, 147; orthotype L. BORBONICA Sauvage.

1437. STEINDACHNER (1884). *Ichthyologische Beiträge,* XIII. Sizgb. Akad. Wiss. Wien, 1883 (1884), 1 Abth., LXXXVIII, 1065–1114.

FRANZ STEINDACHNER.

Parapercis Steindachner, 1071; orthotype P. RAMSAYI Steind. Name preoccupied; replaced by NEOPERCIS Steind.

Peronedys Steindachner, 1083; orthotype P. ANGUILLARIS Steind.

Neopatæcus Steindachner, 1087; orthotype PATÆCUS MACULATUS Gthr.

Austrolabrus Steindachner, 1100; orthotype LABRICHTHYS MACULATA Macleay.

1438. THOMINOT (1884). *Note sur un poisson de la famille des Cyprinodontidæ.* Bull. Soc. Philom., Paris, VII, sér. 8, 149–158.

ALEXANDRE THOMINOT.

Rhodeoides Thominot, 150; orthotype R. VAILLANTI Thominot.

1439. TRAQUAIR (1884). *Notice of New Fish remains from the Blackband Ironstone of Borough Lee, near Edinburgh,* No. 5. Geol. Mag., 1884, III, dec. 1, 64–65.

RAMSAY HEATLEY TRAQUAIR.

Aganacanthus Traquair, 64; orthotype A. STRIATUS Traquair (fossil).

1885.

1440. BEAN (1885). *On Stathmonotus, a New Genus of Fishes Related to Murænoides, from Florida.* Proc. U. S. Nat. Mus., 1885, VIII, 191–192.

TARLETON HOFFMAN BEAN.

Stathmonotus Bean, 191; orthotype S. HEMPHILLI Bean.

1441. CLAYPOLE (1885). *On the Recent Discovery of Pteraspidian Fish in the Upper Silurian Rocks of North America.* Quart. Journ. Geol. Soc., XLI.

EDWARD WALLER CLAYPOLE.

Palæaspis Claypole, 62; orthotype P. AMERICANA Claypole (fossil): (detailed account).

1442. COCCO (1885). *Indice ittiologico del mare di Messina.* Naturalista Siciliana, V.

ANASTASIO COCCO.

Symproptopterus Cocco, 294; orthotype not stated by Hilgendorf. A Paralepis, with dorsal and anal joined to caudal; perhaps a monstrosity; mentioned by Bonaparte, 1846.

1443. COPE (1885). *Eocene Paddle-Fish and Gonorhynchidæ.* Amer. Nat., XIX, 1090–91.

EDWARD DRINKER COPE.

Notogoneus Cope, 1091; orthotype N. OSCULUS Cope (fossil).

1444. DAVIS (1885). *The Fossil Fishes of the Chalk of Mount Lebanon.* Royal Dublin Society, 1885, ser. 2., III. 457–636.

JAMES WILLIAM DAVIS.

Centrophoroides Davis, 478; orthotype C. LATIDENS Davis (fossil).

Rhinognathus Davis, 480; orthotype R. LEWISI Davis. Name preoccupied, replaced by SCAPANORHYNCHUS Woodw., 1889.

Spathiurus Davis, 503; orthotype S. DORSALIS Davis (fossil).

Amphilaphurus Davis, 504; orthotype A. MAJOR Davis (fossil) = SPATHIURUS DORSALIS Davis. A synonym of SPATHIURUS.

Xenopholis Davis, 548; orthotype X. CARINATUS Davis (fossil).

Exocœtoides Davis, 551; orthotype E. MINOR Davis (fossil).

Lewisia Davis, 593; orthotype L. OVALIS Davis = CLUPEA LATA Ag. (fossil). A synonym of SPANIODON Pictet.

Pantopholis Davis, 599; orthotype P. DORSALIS Davis (fossil).

Eurygnathus Davis, 601; logotype E. MAJOR Davis (fossil). A synonym of ENCHODUS Ag.

Phylactocephalus Davis, 605; orthotype P. MICROLEPIS Davis (fossil). A synonym of HALEC Ag.

1445. DE VIS (1885). *New Australian Fishes in the Queensland Museum.* Proc. Linn. Soc. New S. Wales, IX, 389–400, 537–547, etc.

CHARLES W. DE VIS.

Herops De Vis, 392; orthotype H. MUNDA De Vis. A synonym of KUHLIA Gill.

Homodemus De Vis, 395; orthotype H. CAVIFRONS De Vis. A synonym of OLIGORUS Gthr.

Autisthes De Vis, 398; orthotype A. ARGENTEUS De Vis. A synonym of THERAPON Cuv.

Hephæstus De Vis, 399; orthotype H. TULLIENSIS De Vis, THERAPON FULIGINOSUS Macleay. A synonym of THERAPON Cuv.

Neoniphon De Vis, 537; orthotype N. HASTA De Vis. Preoccupied by Castelnau, 1875.

1446. DE VIS (1885). *New Fishes in the Queensland Museum.* Proc. Linn. Soc. New S. Wales, 1885, IX, 869–887.

CHARLES W. DE VIS.

Onar De Vis, 875; orthotype O. NEBULOSUM De Vis. A synonym of PSEUDOCHROMIS Rüppell.

Torresia De Vis, 881; orthotype T. LINEATA De Vis.

Julichthys De Vis, 884; orthotype J. INORNATA De Vis.

1447. FACCIOLÀ (1885). *Su di alcuni rari Pleuronettidi del Mar di Messina. Nota preliminare.* Nat. Sicil., IV, 261–266.

LUIGI FACCIOLÀ.

Charybdia Facciolà, 265; orthotpye PELORIA RUPPELII Cocco. A larval flounder, perhaps young of PLATOPHRYS Sw.

1448. FISCHER (1885). *Ichthyologische und herpetologische Bemerkungen.* Jahrb. Hamburg. Wiss. Anstalten, 1885, II, 49–119.

JOHANN GUSTAV FISCHER (1819–1889).

Sclerocottus Fischer, 58; orthotype S. SCHRADERI Fischer.

Gymnelichthys Fischer, 61; orthotype G. ANTARCTICUS Fischer.

1449. FORBES (1885). *Description of New Illinois Fishes.* Bull. Illinois Lab. Nat. Hist., II.

STEPHEN ALFRED FORBES (1848–).

Oxygeneum Forbes, 136; orthotype O. PULVERULENTUM Forbes.

1450. GARMAN (1885). *The Generic Name of the Pastinacas or Sting Rays.* Proc. U. S. Nat. Mus., VIII.

SAMUEL GARMAN.

Dasybatus (Klein) Garman, 221; orthotype RAJA PASTINACA L. A revival of a non-binomial name of Klein as reprinted by Walbaum in place of DASYATIS Raf. and TRYGON (Adanson) Geoffroy.

1451. GARMAN (1885). *Chlamydoselachus anguineus Garm., a Living Representative of Cladodont Sharks.* Bull. Mus. Comp. Zool. Harvard College, XII.

SAMUEL GARMAN.

Pternodus Garman, 6; orthotype PHŒBODUS SPRINGERI St. John & Worthen (fossil). Name preoccupied by PTERNODUS Owen, 1867; probably a synonym of PHŒBODUS.

Dicranodus Garman, 30; orthotype DIDYMODUS TEXENSIS Cope (fossil). Substitute for DIDYMODUS Cope, regarded as preoccupied by DIDYMODON Blake, 1863, a mammal; perhaps same as DITTODUS Owen and ORTHACANTHUS Ag.

1452. GILL (1885). *Riverside Natural History.* Edited by John Sterling Kingsley. III. *Lower Vertebrates,* Chapter ACANTHOPTERYGIANS.

THEODORE GILL.

Phrynotitan Gill, 255; orthotype BATRACHUS GIGAS, the author not stated, the name not found by me.

1453. GOODE & BEAN (1885). *On American Fishes in the Linnæan Collection.* Proc. U. S. Nat. Mus., VIII.

GEORGE BROWN GOODE; TARLETON HOFFMAN BEAN.

Borborys (Broussonet Ms.) Goode & Bean. 205; orthotype COBITIS HETEROCLITUS L. A synonym of FUNDULUS Lac.

1454. GOODE & BEAN (1885). *Descriptions of New Fishes Obtained by the United States Fish Commission, Mainly from Deep Water Off the Atlantic and Gulf Coasts.* Proc. U. S. Nat. Mus., VIII, 589–605.

GEORGE BROWN GOODE; TARLETON HOFFMAN BEAN.

Neobythites Goode & Bean, 601; orthotype N. GILLI G. & B.

Porogadus Goode & Bean, 602; orthotype P. MILES G. & B.

Bathyonus Goode & Bean, 603; logotype B. CATENA G. & B.

1455. GOODE & BEAN (1885). *Description of a New Genus and Species of Pediculate Fishes (Halieutella lappa).* Proc. Biol. Soc. Wash., II, 88.

GEORGE BROWN GOODE; TARLETON HOFFMAN BEAN.

Halieutella Goode & Bean, 88; orthotype H. LAPPA G. & B.

1456. JORDAN (1885). *Identification of the Species of Cyprinidæ and Catostomidæ Described by Dr. Charles Girard,* etc. (1856). Proc. U. S. Nat. Mus., VIII.

DAVID STARR JORDAN.

Luxilinus Jordan, 126; orthotype LUXILUS OCCIDENTALIS Baird & Girard = young of LAVINIA EXILICAUDA Baird & Grd. A synonym of LAVINIA Baird & Grd.

1457. JORDAN (1885). *A Catalogue of the Fishes Known to Inhabit the Waters of North America North of the Tropic of Cancer.* Rept. U. S. Fish Comm. for 1885 (1887). (Reprint issued 1885.)

DAVID STARR JORDAN.

Crystallaria Jordan & Gilbert, 78; orthotype PLEUROLEPIS ASPRELLUS Jordan.

Rhothœca Jordan, 80; orthotype PŒCILICHTHYS ZONALIS Cope. Substitute for NANOSTOMA Putnam, regarded as preoccupied by NANNOSTOMUS Gthr.

Artediellus Jordan, 110; orthotype COTTUS UNCINATUS Reinh.

Icelinus Jordan, 110; orthotype ARTEDIUS QUADRISERIATUS Lockington.

Otophidium (Gill MS.) Jordan, 126; orthotype GENYPTERUS OMOSTIGMA J. & G.

Pleurogadus (Bean) Jordan, 130; orthotype GADUS NAVAGA Kölr. A substitute for TILESIA, preoccupied. A synonym of ELEGINUS Fischer, 1813, not of Cuvier & Valenciennes, 1830.

Aramaca (Jordan & Goss) Jordan, 133; orthotype CITHARICHTHYS PÆTULUS J. & G. = PLEURONECTES ARAMACA Dönndorf = PLEURONECTES PAPILLOSUS L. A synonym of SYACIUM Ranz.

Eopsetta Jordan & Goss, 135; orthotype HIPPOGLOSSOIDES JORDANI Lockington.

Lyopsetta Jordan & Goss, 135; orthotype HIPPOGLOSSOIDES EXILIS J. & G.

Inopsetta Jordan and Goss, 136; orthotype PAROPHRYS ISCHYRUS J. & G.

1458. JORDAN & MEEK (1885). *A Review of the American Species of Flying-fish.* (EXOCŒTUS.) Proc. U. S. Nat. Mus., VIII.

DAVID STARR JORDAN; SETH EUGENE MEEK (1859–1914).

Fodiator Jordan & Meek, 45; orthotype EXOCŒTUS ACUTUS Cuv. & Val.

1459. KRAMBERGER (1885). *Palæontologische beiträge.* Soc. Hist. Nat. Croatia Rad. Jugoslav. Akad., LXXII.

DRAGUTIN GORJANOVIC KRAMBERGER.

Holcodon Kramberger, 19; orthotype SOLENODON NEOCOMIENSIS Kramberger = SAUROCEPHALUS LYCODON Kner (fossil). Name a substitute for SOLENODON Kramberger, preoccupied; thought to be a synonym of ENCHODUS.

Hypsospondylus Kramberger, 31; orthotype H. BASSANII Kramberger (fossil).

Mesiteia Kramberger, 54; orthotype M. EMILIÆ Kramberger.

1460. KUNISCH (1885). *Dactylolepis gogoliensis.* Zool. Geol. Ges., XXXVII, 588–594.

HERMANN KUNISCH (1853–1893).

Dactylolepis Kunisch, 588; orthotype D. GOGOLIENSIS Kunisch (fossil). A synonym of COLOLOBUS Ag.

1461. LAUBE (1885). *Ein Beiträge zur Kenntniss der Fische des böhmischen Turons.* Denk. Akad. Wiss. Wien., 1. Abth., 285–298.

GUSTAV CARL LAUBE (1839–).

Protelops Laube, 286; orthotype P. GEINITZII Laube (fossil).

1462. MARCK (1885). *Fische der oberen Kreide Westfalens.* Paleontographica. 1885, XXXI, 233–267.

W. VON DER MARCK.

Charitosomus Marck, 257; orthotype C. FORMOSUS Hosius & von der Marck (fossil).

1463. MOCQUARD (1885). *Sur un nouveau genre de Blenniidæ voisin des Clinus.* Bull. Soc. Philom. Paris, 1885, 18–20.

M. MOCQUARD.

Acanthoclinus Mocquard, 18; orthotype A. CHAPERI Mocquard. Name preoccupied; replaced by PARACLINUS Mocquard (1886).

1464. NEWBERRY (1885). *Description of Some Gigantic Placoderm Fishes Recently Discovered in the Devonian of Ohio.* Trans. N. Y. Acad. Sci., 1885, V, 25–28.

JOHN STRONG NEWBERRY.

Titanichthys Newberry, 27; orthotype T. AGASSIZI Newberry.

1465. NEWBERRY (1885). *Description of Some Peculiar Screw-like Fossils from the Chemung Rocks.* Ann. N. Y. Acad. Sci., XVIII, 217–220.

JOHN STRONG NEWBERRY.

Spiraxis Newberry, 219; orthotype S. MAJOR Newberry. Name preoccupied; replaced by PROTOSPIRAXIS Williams.

1466. NOETLING (1885). *Die Fauna des sammländischen Tertiäres. (Pisces.)* Abh. Geol. Spec. Preuss., 1885, VI, 3–106.

FRITZ NOETLING (1857–).

Pseudosphærodon Noetling, 104; orthotype P. HILGENDORFI Noetling (fossil).

1467. OGILBY (1885). *Notes and Descriptions of Some Rare Port Jackson Fishes.* Proc. Linn. Soc. New S. Wales, X.

JAMES DOUGLAS OGILBY (1848–).

Petraites Ogilby, 225; orthotype P. HEPTACOLUS Ogilby.

1468. ROCHEBRUNE (1885). *Poissons de la Rivière Casamence, Afrique occidentale.* Bull. Sci. Philom. Paris, IX.

ALPHONSE TRÉMEAU DE ROCHEBRUNE.

Gyrinostomus Rochebrune, 96; orthotype G. MARCHEI Rochebrune.

1469. STEINDACHNER & DÖDERLEIN (1885). *Beiträge zur Kenntniss der Fische Japans.* (3) Denkshr. Akad. Wiss. Wien, XLIX.

FRANZ STEINDACHNER; LUDWIG DÖDERLEIN.

Neopercis Steindachner, 212; orthotype PERCIS RAMSAYI Steind. Substitute for PARAPERCIS Steind., preoccupied.

1886.

1470. BASSANI (1886). *Sui fossili e sull' età degli scisti bituminosi triasici di Besano in Lombardia.* Atté. Soc. Ital. Sci. Nat., XXIX.

FRANCESCO BASSANI.

Nothosomus Bassani, 37; orthotype N. BELLOTTI Bassani (fossil).

1471. COLLETT (1886). *On a New Pediculate Fish from the Sea off Madeira (Linophryne lucifer).* Proc. Zool. Soc. London, 138–142.

ROBERT COLLETT.

Linophryne Collett, 138; orthotype L. LUCIFER Collett.

1472. COPE (1886). *Fossil Fishes from Brazil.* Proc. Amer. Phil. Soc., XXIII.

EDWARD DRINKER COPE.

Apocopodon Cope, 2; orthotype A. SERICEUS Cope (fossil).

Chiromystus Cope, 4; orthotype C. MAWSONI Cope (fossil).

1473. COPE (1886). *On Two New Forms of Polyodont and Gonorhynchid Fishes from the Rocky Mountains.* Mem. Nat. Acad. Sci., Washington, III.

EDWARD DRINKER COPE.

Crossophilus Cope, 162; orthotype C. MAGNICAUDATUS Cope.

1474. COPE (1886). *An Interesting Connecting Genus of Chordata.* Amer. Nat., XX.

EDWARD DRINKER COPE.

Mycterops Cope, 1027; orthotype M. ORDINATUS Cope. (Said by Woodward to be an EURYPTERID CRUSTACEAN.)

1475. FRITSCH (1886). *Ergebnisse der Vergleichungen an den elektrischen Organen der Torpedinen.* Arch. Anat. Physiol., 358–370.

GUSTAV THEODOR FRITSCH.

Gymnotorpedo Fritsch, 365; logotype TORPEDO OCCIDENTALIS Storer.

Fimbriotorpedo Fritsch, 365; logotype TORPEDO MARMORATA Risso = RAJA TORPEDO L. A synonym of TORPEDO Duméril, and of authors.

1476. GOODE & BEAN (1886). *Reports on the Results of Dredging, under the supervision of Alexander Agassiz, in the Gulf of Mexico (1877–78) and in the Caribbean Sea (1879–80), by the U. S. Coast Survey steamer "Blake,"* etc. Bull. Mus. Comp. Zool., Harvard Coll., 1886, XII, no. 5, 153–170.

GEORGE BROWN GOODE; TARLETON HOFFMAN BEAN.

Barathronus Goode & Bean, 164; orthotype, B. BICOLOR G. & B.

Benthosaurus Goode & Bean, 168; orthotype B. GRALLATOR G. & B.

1477. JORDAN (1886). *List of Fishes Collected at Havana, Cuba, in December, 1883, with notes and descriptions.* Proc. U. S. Nat. Mus. IX.

DAVID STARR JORDAN.

Scartella Jordan, 50; orthotype BLENNIUS MICROSTOMUS Poey.

1478. JORDAN & EVERMANN (1886). *Description of Six New Species of Fishes from the Gulf of Mexico, with Notes on Other Species.* Proc. U. S. Nat. Mus., 1886, IX, 466–476. (September 17.)

DAVID STARR JORDAN; BARTON WARREN EVERMANN.

Steinegeria Jordan & Evermann, 467; orthotype S. RUBESCENS J. & E.

1479. JORDAN (1886). *Notes on Typical Specimens of Fishes Described by Cuvier and Valenciennes and preserved in the Musée d'Histoire Naturelle in Paris.* Proc. U. S. Nat. Mus., 1886, IX, 525–546.

DAVID STARR JORDAN.

Marcgravia Jordan, 546; orthotype BATRACHUS CRYPTOCENTRUS Cuv. & Val. A synonym of AMPHICHTHYS Sw., the name later changed to MARCGRAVICHTHYS by Ribeiro, because MARCGRAVIA is used in Botany.

1480. JORDAN (1886). *A Preliminary Catalogue of the Fishes of the West Indies.* Proc. U. S. Nat. Mus., IX.

DAVID STARR JORDAN.

Amiichthys (Poey), Jordan, 586; orthotype ——— DIAPTERUS Poey (1861). Only the specific name of this fish was published by Poey.

1481. JORDAN & FORDICE (1886). *A Review of the American Species of Belonidæ.* Proc. U. S. Nat. Mus., IX.

DAVID STARR JORDAN; MORTON W. FORDICE.

Athlennes Jordan & Fordice, 342; orthotype BELONE HIANS Cuv. & Val. See ABLENNES, of which word ATHLENNES was an accidental slip in writing.

Ablennes Jordan & Fordice, 342; orthotype BELONE HIANS Cuv. & Val. Misprinted ATHLENNES, an orthography accepted by Jordan & Evermann, but altered to the correct Greek form from ἀβλέννης (sans mucosité, an old name for the needlefish), by a decision of the International Commission on Nomenclature.

1482. LARRAZET (1886). *Des Pièces de la peau de quelques sélaciens fossiles.* Bull. Soc. Geol. France, 1886, III, ser. 14, 255–277.

AUGUSTIN LARRAZET (1855–).

Dynatobatis Larrazet, 258; logotype D. PARANENSIS Larrazet (fossil).
Acanthobatis Larrazet, 258; orthotype A. EXIMIA Larrazet (fossil).

1483. MACLEAY (1886). *A Remarkable Fish from Lord Howe Island.* Proc. Linn. Soc. New South Wales, 1886, X, 718–720.

WILLIAM MACLEAY.

Ctenodax Macleay, 718; orthotype C. WILKINSONI Macleay. A synonym of TETRAGONURUS Risso.

1484. MIKLUKHO-MACLAY & MACLEAY (1886). *Plagiostomata of the Pacific.* III. Proc. Linn. Soc. N. South Wales, 1886, X, 674–684.

NICOLAI NICOLAEVICH MIKLUKHO-MACLAY; WILLIAM MACLEAY.

Discobatis Miklukho-Maclay & Macleay, 676; orthotype D. MARGINIPINNIS Miklukho-Maclay & Macleay = RAJA LYMMA Forskål. A synonym of TÆNIURA M. & H.; not DISCOBATUS Garman.

1485. ROMANOVSKY (1886). *(Lyrolepis.)* Geol. Soc. St. Petersburg, XXII.

GHENNADI DANILOVICH ROMANOVSKY.

Lyrolepis Romanovsky, 304; orthotype L. CAUCASICUS Romanovsky (fossil).

1486. STORMS (1886). *Note sur un nouveau genre de poisson fossile de l'argile rupélienne.* Ann. Soc. Geol. Belgique. XIII. 261–266.

RAYMOND STORMS.

Amphodon Storms, 265; orthotype A. BENEDENI Storms (fossil). Regarded as preoccupied by AMPHODUS Peters, 1872; replaced by SCOMBRAMPHODON Woodw., 1901.

1487. SZAJNOCHA (1886). *Ueber fossile Fische von Monte Bolca bei Verona.* Pam. Akad. Krakau, XII, (text in Polish).

WLADYSLAW SZAJNOCHA (1857–).

Hacquetia Szajnocha, 3; orthotype H. BOLCENSIS Szajnocha (fossil).

1488. TRAQUAIR (1886). *On Harpacanthus, a New Genus of Carboniferous selachian spines.* Ann. Mag. Nat. Hist., 1886, 5 ser., XVIII, 493–496.

RAMSAY HEATLEY TRAQUAIR.

Harpacanthus Traquair, 493; orthotype TRISTYCHIUS FIMBRIATUS Stock. (fossil).

1489. VAILLANT (1886). *Considerations sur les poissons des grandes profondeurs et en particulier sur . . . les Abdominales.* Comptes Rendus, Ac. Sci. Paris, CIII.

LÉON LOUIS VAILLANT.

Anomalopterus Vaillant, 1239; orthotype A. PINGUIS Vaillant.
Leptoderma Vaillant, 1239; orthotype L. MACROPS Vaillant.

1490. WETTSTEIN (1886). *Ueber die Fischfauna des tertiaren Glarnerschiefers.* Abh. Schweiz. Palæont. Ges., XIII, 1–103.

ALEXANDER WETTSTEIN (1861–1887).

Scopeloides Wettstein, 55; orthotype OSMERUS GLARISIANUS Ag. (fossil).
Archæteuthis Wettstein, 67; orthotype A. GLARONESIS Wettstein (fossil).
Cyttoides Wettstein, 91; orthotype C. GLARONESIS Wettstein (fossil).

1491. YATES (1886). *Catalogue of Fossils in Lorenzo G. Yates Collection, Santa Barbara, Cal.*

LORENZO G. YATES.

Platychodus Yates, 20; orthotype PTYCHODUS MORTONI Mantell (fossil). A synonym of PTYCHODUS Ag. (perhaps a slip of the pen for the latter name).

1887.

1492. BEAN (1887). *Description of a New Genus and Species of Fish, Acrotus willoughbyi from Washington Territory.* Proc. U. S. Nat. Mus., X, 631–632.

TARLETON HOFFMAN BEAN.

Acrotus Bean, 631; orthotype A. WILLOUGHBYI Bean.

1493. BOULENGER (1887). *An Account of Fishes Collected by Mr. C. Buckley in eastern Ecuador.* Proc. Zool. Soc. London, 1887, II, 274–283.

GEORGE ALBERT BOULENGER (1858–).

Nannoglanis Boulenger, 278; orthotype N. FASCIATUS Boulenger.
Leptogoniates Boulenger, 281; orthotype L. STEINDACHNERI Boulenger.

1494. DAMES (1887). *Ueber Titanichthys pharao . . . aus der Kreideformation Aegyptens.* Sitzber. Ges. Nat. Freunde Berlin, 69–72.

WILHELM BARNIM DAMES (1843–1898).

Titanichthys Dames, 69; orthotype T. PHARAO Dames. Name preoccupied; replaced by GIGANTICHTHYS Dames, p. 137, 1888.

1495. FORIR (1887.) *Contributions a l'étude du système Cretacé de la Belgique.* Ann. Mem. Soc. Geol. Belgique, XIV, 25–56.

H. FORIR.

Anomœodus Forir, 25; orthotype PYCNODUS SUBCLAVATUS Ag. (fossil).

1496. GÜNTHER (1887). *Report on the Deep-Sea Fishes Collected by H. M. S. "Challenger" during the years 1873–76. In Report on the Scientific Results of the Voyage of H. M. S. "Challenger" during the years 1873–76,* XXII, pt. 57, 1–268.

ALBERT GÜNTHER.

Synagrops Günther, 16; orthotype MELANOSTOMA JAPONICUM Döderlein. Substitute for MELANOSTOMA Döderlein, preoccupied.
Malacosarcus Günther, 30; orthotype M. MACROSTOMUS Gthr.
Diceratias Günther, 53; orthotype CERATIAS BISPINOSUS Gthr.
Lyocetus Günther, 57; orthotype L. MURRAYI Gthr.
Salilota Günther, 95; orthotype HALOPORPHYRUS AUSTRALIS Gthr.
Catætyx Günther, 104; orthotype SIREMBO MESSIERI Gthr.
Pteroidonus Günther, 106; orthotype P. QUINQUARIUS Gthr.
Mixonus Günther, 108; orthotype BATHYNECTES LATICEPS Gthr.
Nematonus Günther, 114; orthotype BATHYONUS PECTORALIS G. & B.
Diplacanthopoma Günther, 115; orthotype D. BRACHYSOMA Gthr.
Nematonurus Günther, 124; orthotype N. ARMATUS (Hector).
Cetonurus Günther, 124; orthotype C. CRASSICEPS Gthr.
Trachonurus Günther, 124; orthotype MACRURUS VILLOSUS Gthr.
Lionurus Günther, 124; orthotype CORYPHÆNOIDES FILICAUDA Gthr.
Mystaconurus Günther, 124; orthotype M. LONGIBARBIS Gthr.; a synonym of HYMENOCEPHALUS Giglioli.
Optonurus Günther, 147; orthotype O. DENTICULATUS Günther.
Lyconus Günther, 158; orthotype L. PINNATUS Gthr.

Polyipnus Günther, 170; orthotype P. SPINOSUS Gthr.
Nannobrachium Günther, 199; orthotype N. NIGRUM Gthr.
Omosudis Günther, 201; orthotype O. LOWI Gthr.
Opostomias Günther, 208; orthotype ECHIOSTOMA MACRIPNUS Gthr.
Pachystomias Günther, 210; orthotype ECHIOSTOMA MICRODON Gthr.
Photonectes Günther, 212; orthotype LUCIFER ALBIPENNIS Döderlein. Substitute for LUCIFER Döderlein, preoccupied.

1497. GÜNTHER (1887). *Descriptions of Two New Species of Fishes from Mauritius,* etc. Proc. Zool. Soc. London.

ALBERT GÜNTHER.

Hoplolatilus Günther, 550; orthotype LATILUS FRONTICINCTUS Gthr.

1498. HERZENSTEIN & VARPAKHOVSKII (1887). *Notizen ueber die Fischfauna des Amur-Beckens und der angrenzenden Gebiete* (Russian text). Trudui St. Petersb. Nat., 1887, XVIII, 1–58.

SALOMON MARKOVICH HERZENSTEIN (1854–1894);
NIKOLAI ARKADEVICH VARPAKHOVSKII (1862–).

Octonema Herzenstein, 47; orthotype O. PLESKEI Herzenstein. Name preoccupied; replaced by LEFUA Herzenstein.

1499. MATTHEW (1887). *Preliminary Notice of a New Genus of Silurian Fishes (Diplaspis acadicus).* Bull. Nat. Hist. Soc. New Brunswick, VI.

GEORGE FREDERICK MATTHEW (1837–).

Diplaspis Matthew, 69; orthotype PTERASPIS ACADICA Matthew (fossil). A synonym of CYATHASPIS Lankester.

1500. MORTON (1887). *(Eurumetopos.)* Proc. Roy. Soc. Tasmania for 1887. (1888.)

ALLPORT MORTON.

Eurumetopos Morton, 77; orthotype E. JOHNSTONI Morton. A synonym of HYPEROGLYPHE Gthr.

1501. OGILBY (1887). *On a New Genus of Percidæ.* Proc. Zool. Soc. London, 1887, 616–18.

JAMES DOUGLAS OGILBY.

Chthamalopteryx Ogilby, 616; orthotype C. MELBOURNENSIS Ogilby. A synonym of PAREQUULA Steind.

1502. OGILBY (1887). *On a New Genus and Species of Australian Mugilidæ.* Proc. Zool. Soc. London, 614–616.

JAMES DOUGLAS OGILBY.

Trachystoma Ogilby, 614; orthotype T. MULTIDENS Ogilby.

1503. PHILIPPI (1887). *Historia natural. Sobre los tiburones y algunos otros peces de Chile.* Anal. Univ. Chile, 1887, LXXI, 1–42.

RUDOLPHO AMANDUS PHILIPPI.

Graus Philippi, 40; orthotype G. NIGRA Philippi.

1504. RAMSAY & OGILBY (1887). *On a New Genus and Species of Labroid Fish from Port Jackson.* Proc. Linn. Soc. New South Wales, 1887 (2), II, 631–634.

EDWARD PIERSON RAMSAY; JAMES DOUGLAS OGILBY.

Eupetrichthys Ramsay & Ogilby, 631; orthotype E. angustipes Ramsay & Ogilby.

1505. RAMSAY & OGILBY (1887). *Notes on the Genera of Australian Fishes.* Proc. Linn. Soc. New South Wales, 1887, 2 ser., II, 181–184.
Edward Pierson Ramsay; James Douglas Ogilby.

Percalates Ramsay & Ogilby, 182; orthotype Lates colonorum Gthr.

1506. SCHLÜTER (1887). *Panzerfische, etc.* Niederrhein. Ges., Bonn, 1887, 120. (Also in Nat. Ver. Preuss. West., XLIV, 1888, 126.)
Clemens (August Joseph) Schlüter (1836–).

Ceraspis Schlüter, 120; orthotype C. carinatus Schlüter (fossil). Name preoccupied, according to Hilgendorf.

Drepanaspis Schlüter, 120; orthotype D. gemuendensis Schlüter (fossil).

1507. STEINDACHNER & DÖDERLEIN (1887). *Beiträge zur Kenntniss der Fische Japans, IV.* Denksch. Kais. Akad. Wiss. Wien., 1887, LIII, 258–296.
Franz Steindachner; Ludwig Döderlein.

Myxocephalus Steindachner & Döderlein, 281; orthotype M. japonicus Steindachner & Döderlein.

1508. STORMS (1887). *Notes sur les poissons fossiles du terrain rupélien.* Bull. Soc. Belg. Geol. Paléont., I, 98–112.
Raymond Storms.

Platylates Storms, 98; orthotype P. rupeliensis Storms (fossil).

1509. VARPAKHOVSKII (1887). *Ueber die Gattung Hemiculter Bleeker und uber eine neue Gattung, Hemiculterella.* Bull. Acad. Sci. St. Petersb., 14–23.
Nikolai Arkadevich Varpakhovskii.

Hemiculterella Varpakhovskii, 23; orthotype H. sauvagei Varpakhovskii.

1510. WILLIAMS (1887). *On the Fossil Faunas of the Upper Devonian, the Genesee Section, New York.* Bull. U. S. Geol. Surv., XLI, 1–104.
Henry Shaler Williams (1847–1916).

Prospiraxis Williams, 86; orthotype Spiraxis major Newberry (fossil). Substitute for Spiraxis Newberry, preoccupied.

1511. ZIGNO (1887). *Due novi pesci fossili della famiglia dei Balistini, scoperto nel terreno Eoceno del Veronese.* Mem. Soc. Ital., VI.
Achille de Zigno (1813–1892).

Probalistum (Massalongo) Zigno, 3; orthotype Ostracion imperialis Massalongo (fossil). A synonym of Spinacanthus Ag.

1512. ZITTEL (1887). *Handbuch der Paleontologie. I. Abtheilung. Palæozoologie, Band III. Vertebrata,* 1887–90, pp. 1–900.
Karl Alfred von Zittel (1839–1904).

Chalcodus Zittel, 72; orthotype C. permianus Zittel (fossil).

Metopacanthus Zittel, 110; orthotype Ischyodus orthorhinus Egerton (fossil). A synonym of Myriacanthus Ag.

Chimæropsis Zittel, 113; orthotype C. paradoxa Zittel (fossil).

Isopholis Zittel, 216; logotype Ophiopsis munsteri Ag. A synonym of Eugnathus Ag.; regarded as preoccupied. But Furo Gistel, 1848, is a still earlier substitute.

1888.

1513. BASSANI (1888). *Sopra un nuovo genere di fisostomi scoperto nell' Eocene medio del Friuli, in provincia di Udine.* Atti. Acad. Sci. Napoli, 1889, 2 ser., III, 1–4.

FRANCESCO BASSANI.

Omiodon Bassani, 2; orthotype O. CABASSI Bassani (fossil).

1514. DAMES (1888). *Amblypristis cheops, aus dem Eocän Aegyptens.* Sitzber. Ges. Naturf. Berlin, 1888, 106–109.

WILHELM BARNIM DAMES.

Amblypristis Dames, 106; orthotype A. CHEOPS Dames (fossil).

1515. DAMES (1888). *Die Ganoiden der deutschen Muschelkalk.* Paleont. Abh., IV, Heft 2, 131–180 (1–50 reprint).

WILHELM BARNIM DAMES.

Gigantichthys Dames, 137 (7 reprint); orthotype TITANICHTHYS PHARAO Dames (fossil). Substitute for TITANICHTHYS Dames, preoccupied.

Crenilepis Dames, 171 (40 reprint); orthotype C. SANDBERGERI Dames (fossil; a fragment of a scale from the Muschelkalk of Krainberg, Germany.)

1516. DAY (1888). *Supplement to the Fishes of India.*

FRANCIS DAY.

Acanthonotus (Tickell) Day, 807; orthotype A. ARGENTEUS Day. Name preoccupied, replaced by MATSYA Day, 1889.

1517. EIGENMANN & EIGENMANN (1888). *Preliminary Notes on South American Nematognathi.* Proc. Cal. Acad. Sci., 119–172.

CARL H. EIGENMANN (1863–); ROSA SMITH EIGENMANN (1860–).

Luciopimelodus Eigenmann & Eigenmann, 122; logotype PIMELODUS PATI Val.

Pimelodella Eigenmann & Eigenmann, 136; orthotype PIMELODUS CRISTATUS M. & T.

Duopalatinus Eigenmann & Eigenmann, 136; orthotype PLATYSTOMA EMARGINATUM Cuv. & Val.

Sciadeoides Eigenmann & Eigenmann, 136; orthotype SCIADES MARMORATUS Gill.

Steindachneria Eigenmann & Eigenmann, 137; orthotype PLATYSOMA PARAHYBÆ Steind. Name preoccupied; replaced by STEINDACHNERIDION Eigenmann.

Hassar Eigenmann & Eigenmann, 158; orthotype DORAS ORESTES Steindachner.

Decapogon Eigenmann & Eigenmann, 165; orthotype CALLICHTHYS ADSPERSUS Steindachner.

Neoplecostomus Eigenmann & Eigenmann, 171; orthotype PLECOSTOMUS MICROPS Steindachner.

Rhamdella Eigenmann & Eigenmann, 172; logotype R. ERIARCHA Eigenmann & Eigenmann.

1518. EIGENMANN & EIGENMANN (1888). *A List of American Species of Gobiidæ and Callionymidæ, with notes on the Specimens Contained in the Museum of Comparative Zoology, at Cambridge, Massachusetts.* Proc. Cal. Acad. Sci., 1888, 2 ser., 51–78.

CARL H. EIGENMANN; ROSA SMITH EIGENMANN.

Barbulifer Eigenmann & Eigenmann, 70; orthotype B. PAPILLOSUS Eigenmann & Eigenmann = GOBIOSOMA CEUTHŒCUM J. & G.

Clevelandia Eigenmann & Eigenmann, 73; orthotype GOBIOSOMA LONGIPINNE Steind.

1519. FRITSCH (1888). *Fauna der Gaskohle und der Kalksteine der Permformation Böhmens, II.*

ANTON JAN FRITSCH.

Dipnoites Fritsch, 86; orthotype D. PERNERI Fritsch (fossil). A cranial bone.

1520. FACCIOLÀ (1888). *Annunsio ittiologico.* Natur. Sicil., VII.

LUIGI FACCIOLÀ.

Sympodoichthys Facciolà, 167; orthotype S. FASCIATUS Facciolà.

1521. GARMAN (1888). *On an Eel from the Marshall Islands.* Bull. Essex Institute, 1889, XX, 114–116.

SAMUEL GARMAN.

Rhinomuræna Garman, 114; orthotype R. QUÆSITA Garman.

1522. GILL (1888). *On the Classification of the Mail-Checked Fishes.* Proc. U. S. Nat. Mus., XI.

THEODORE GILL.

Histiocottus Gill, 573; orthotype PEROPUS BILOBUS Lay & Bennett. Substitute for PEROPUS Lay & Bennett, preoccupied.

1523. GILL (1888). *Gleanings Among the Pleuronectids, and Observations on the Name Pleuronectes.* Proc. U. S. Nat. Mus., XI.

THEODORE GILL.

Eucitharus Gill, 600; orthotype PLEURONECTES LINGUATULA L. Substitute for CITHARUS Blkr., preoccupied by CITHARUS Reinh., 1838; itself a synonym of CITHARUS Röse, 1793.

Cyclopsetta Gill, 601; orthotype HEMIRHOMBUS FIMBRIATUS G. & B.

Trichopsetta Gill, 601; orthotype ARNOGLOSSUS VENTRALIS G. & B.

1524. GILL (1888). *Some Extinct Scleroderms.* Amer. Naturalist, 1888, XXII, 446–448.

THEODORE NICHOLAS GILL.

Protacanthodes Gill, 448; orthotype PROTOBALISTUM OMBONI Zigno (fossil).

1525. GILL (1888). *Note on the Genus Dipterodon.* Proc. U. S. Nat. Mus., XI.

THEODORE GILL.

Dichistius Gill, 68; orthotype DIPTERODON CAPENSIS Cuv. Substitute for DIPTERODON Cuv. (1829), preoccupied by DIPTERODON Lac. (1803).

1526. GOODE & BEAN (1888). *Three Cruises of the "Blake," by Alexander Agassiz, II.*

GEORGE BROWN GOODE; TARLETON HOFFMAN BEAN.

Steindachneria Goode & Bean, 26; orthotype (S. ARGENTEA G. & B.) A short diagnosis but no type named; fully defined in Oceanic Ichthyology, 1896, 419. Meanwhile a genus of South American Silurids had been named STEINDACHNERIA by Eigenmann, who gave the present genus of MACRURIDS the name of STEINDACHNERELLA. But the first diagnosis is adequate to hold the name, and a new name, STEINDACHNERIDION, has been assigned by Eigenmann to his genus of SILURIDS.

1527. HERZENSTEIN (1888). *Wissenschaftliche Resultate der von N. M. Przewalski nach Central-Asien unternommenen Reisen.* Zoologischer Theil, Band III, 2 Abth., 1 Lief., 91 p.

SALOMON MARKOVICH HERZENSTEIN.

Lefua Herzenstein, 3; orthotype Octonema pleskei Herzenstein, substitute for Octonema Herzenstein & Varpachovski, preoccupied. Replaces Elxis Jordan & Fowler.

1528. HERZENSTEIN (1888). *Wissenschaftliche Resultate der von N. M. Przewalski nach Central-Asien unternommenen Reisen.* Zoologischer Theil, III, 2 Abth., 2 Lief., Fische, 181–262.

Salomon Markovich Herzenstein.

Chuanchia Herzenstein, 224; orthotype C. labiosa Herzenstein.

Platypharodon Herzenstein, 226; orthotype P. extremus Herzenstein.

1529. HILGENDORF (1888). *Fische aus dem Victoria Nyansa (Ukerewe-see) . . . Dr. G. A. Fischer.* Sitzber. Ges. Naturforscheude Freunde,. Berlin.

Franz Martin Hilgendorf.

Haplochromis Hilgendorf, 76; orthotype H. obliquidens Hilgendorf.

1530. JENKINS & EVERMANN (1888). *Description of Eighteen New Species of Fishes from the Gulf of California.* Proc. U. S. Nat. Mus., X, 137–158.

Oliver Peebles Jenkins (1850–); Barton Warren Evermann.

Hermosilla Jenkins & Evermann, 144; orthotype H. azurea Jenkins & Evermann.

Psednoblennius Jenkins & Evermann, 156; orthotype P. hypacanthus Jenkins & Evermann.

1531. JORDAN (1888). *On the Generic Name of the Tunny.* Proc. Acad. Nat. Sci. Phila.

David Starr Jordan.

Albacora Jordan, 180; orthotype Scomber thynnus L. A substitute for Thynnus Cuv., preoccupied, but Thunnus South is older.

Germo Jordan, 180; orthotype Scomber alalunga Gmelin.

1532. JORDAN (1888). *Manual of the Vertebrates, etc.* Edition V.

David Starr Jordan.

Miniellus Jordan, 56; orthotype Hybopsis procne Cope. A synonym of Alburnops Grd.

1533. JORDAN & BOLLMAN (1888). *List of Fishes Collected at Green Turtle Cay, in the Bahamas, by Charles L. Edwards; with Descriptions of Three New Species.* Proc. U. S. Nat. Mus., XI, 549–553.

David Starr Jordan; Charles Harvey Bollman (1868–1889).

Stilbiscus Jordan & Bollman, 549; orthotype S. edwardsi Jordan & Bollman. An ally of Moringua Gray.

1534. JORDAN & GOSS (1888). *A Review of the Flounders and Soles (Pleuronectidæ) of America and Europe.* Ann. Rept. U. S. Comm. Fish and Fisheries for 1886 (1888).

David Starr Jordan; David Kop Goss (1863–1900).

Azevia Jordan & Goss, 271; orthotype Citharichthys panamensis Steindachner.

Quenselia Jordan, 306; orthotype Pleuronectes ocellatus L.

Acedia Jordan, 321; orthotype Aphoristia nebulosa G. & B.

1535. KIRSCH (1888). *Note on a Collection of Fishes Obtained in the Gila River at Fort Thomas, Arizona, by Lieut. W. L. Carpenter, U. S. Army.* Proc. U. S. Nat. Mus., XI, 555–558.

Philip Henry Kirsch (1851–1900).

Xyrauchen Kirsch, 556; orthotype CATOSTOMUS CYPHO Lockington = CATOSTOMUS TEXANUS C. C. Abbott.

1536. MOCQUARD (1888). *Revision des Clinus de la Collection du Museum, etc.* Bull. Sci. Philom. Paris, I.

F. MOCQUARD.

Paraclinus Mocquard, 41; orthotype ACANTHOCLINUS CHAPERI Mocquard. Substitute for ACANTHOCLINUS Mocquard, preoccupied.

1537. REIS (1888). *Die Cœlacanthinen mit besonder Berücksichten der im Weissen Jura Bayerns vorkommenden Gattungen.* Paleontographica, XXV.

OTTO M. REIS.

Rhabdoderma Reis, 71; orthotype CŒLACANTHUS ELEGANS Ag. (fossil). A synonym of CŒLACANTHUS Ag.

1538. STEINDACHNER (1888). *Ichthyologische Beiträge, XIV.* S. B. Ak. Wiss. Wien., XCIX.

FRANZ STEINDACHNER.

Hoplotilapia Steindachner, 60; orthotype PARATILAPIA RETRODENS Steindachner.

1539. TRAQUAIR (1888). *Further Notes on Carboniferous Selachii.* Geol. Mag. 3, dec. V.

RAMSAY HEATLEY TRAQUAIR.

Callopristodus Traquair, 85; orthotype CTENOPTYCHIUS PECTINATUS Ag. (fossil).
Dicentrodus Traquair, 86; orthotype CLADODUS BICUSPIDATUS Traquair (fossil).
Chondrenchelys Traquair, 103; orthotype C. PROBLEMATICA Traquair (fossil).

1540. TRAQUAIR (1888). *Notes on the Nomenclature of the Fishes of the Old Red Sandstone of Great Britain.* Geol. Mag., 1888, III, dec. 5, 507–517.

RAMSAY HEATLEY TRAQUAIR.

Microbrachium Traquair, 510; orthotype M. DICKII Traquair (fossil).
Mesacanthus Traquair, 511; orthotype ACANTHODES PUSILLUS Ag. (fossil).
Rhadinacanthus Traquair, 511; orthotype DIPLACANTHUS LONGISPINUS Ag. (fossil). A synonym of DIPLACANTHUS Ag.
Thursius Traquair, 516; orthotype T. PHOLIDOTUS Traquair (fossil).

1541. TRAUTSCHOLD (1888). *Ueber Edestus protopirata Trd.* Zeitschr. Deutsch. Geol. Ges., 1888, XL, 750–753.

HERMANN VON TRAUTSCHOLD.

Protopirata Trautschold, 750; orthotype EDESTUS PROTOPIRATA Trautschold (fossil). = P. CENTRODON Trautschold. A synonym of EDESTUS Leidy.

1542. VAILLANT (1888). *(Poissons.) Mission scientifique du Cap Horn, 1882–83.* VI, Zoologie, Paris, 1888, 1–35.

LÉON (LOUIS) VAILLANT.

Enantioliparis Vaillant, 22; orthotype E. PALLIDUS Vaillant.

1543. VAILLANT (1888). *Expéditions scientifiques du "Travailleur" et du "Talisman" pendant les années 1880, 1881, 1882, 1883. Poissons.* Paris, 1–406.

LÉON VAILLANT.

Gyrionemus Vaillant, 18, 45; orthotype G. NUMMULARIS Vaillant = DIRETMUS ARGENTEUS G. & B. A synonym of DIRETMUS Gthr.
Opisthoproctus Vaillant, 105; orthotype O. SOLEATUS Vaillant.

Eustomias Vaillant, 112; orthotype E. OBSCURUS Vaillant.

Scopelogadus Vaillant, 141, 385; orthotype S. COCLES Vaillant. A synonym of MELAMPHAES Gthr.

Anomalopterus Vaillant, 160; orthotype A. PINGUIS Vaillant. This genus and the next noticed in 1886.

Leptoderma Vaillant, 165; orthotype L. MACROPS Vaillant.

Alexeterion Vaillant, 182; orthotype L. PARFAITI Vaillant.

Brosmiculus Vaillant, 292; orthotype B. IMBERBIS Vaillant.

Lycodophis Vaillant, 311; orthotype L. ALBUS Vaillant. A synonym of LYCENCHELYS Gill.

Gymnolycodes Vaillant, 312; orthotype G. EDWARDSI Vaillant.

Neostoma Vaillant, 385; logotype N. BATHYPHILUS Vaillant.

1544. WOODWARD (1888). *A Synopsis of the Vertebrate Fossils of the English Chalk.* Proc. Geol. Assoc. London, 1888, X, 273–338.

ARTHUR SMITH WOODWARD (1864–).

Synechodus Woodward, 288; orthotype HYBODUS DUBRISIENSIS Mackie (fossil).

Elasmodectes (Newton) Woodward, 301; orthotype ELASMOGNATHUS WILLETTI Newton (fossil). Substitute for ELASMOGNATHUS Newton, preoccupied.

Neorhombolepis Woodward, 304; orthotype N. EXCELSUS Woodw. (fossil).

1889.

1545. ALCOCK (1889) *On the Bathybial Fishes of the Bay of Bengal and Neighboring Waters, Obtained During the Season of 1888–9.* Ann. Mag. Nat. Hist., 1889, IV, 376–399, 450–461.

ALFRED WILLIAM ALCOCK.

Paracentroscyllium Alcock, 379; orthotype P. ORNATUM Alcock.

Brephostoma Alcock, 383; orthotype B. CARPENTERI Alcock.

Pycnocraspedum Alcock, 386; orthotype P. SQUAMIPINNE Alcock.

Paradicrolene Alcock, 387; orthotype P. MULTIFILIS Alcock.

Saccogaster Alcock, 389; orthotype S. MACULATUS Alcock.

Glyptophidium Alcock, 390; orthotype G. ARGENTEUM Alcock.

Halosaurichthys Alcock, 454; orthotype H. CARINICAUDA Alcock.

Coloconger Alcock, 456; orthotype C. RANICEPS Conger.

Sauromurænesox Alcock, 457; orthotype S. VORAX Alcock.

Dysomma Alcock, 459; orthotype D. BUCEPHALUS Alcock.

Gavialiceps Alcock, 460; orthotype G. TÆNIOLA Alcock.

1546. BEAN (1889). *Description of a New Cottoid Fish Collected by the U. S. Fish Com. (Synchirus gilli).* Proc. U. S. Nat. Mus., XII, 641–642.

TARLETON HOFFMAN BEAN.

Synchirus Bean, 642; orthotype S. GILLI Bean.

1547. COLLETT (1889). *Diagnoses de poissons nouveaux provenant des campagnes de "L'Hirondelle."* Bull. Soc. Zool. France, 1889, XIV, 291–293, 122–132.

ROBERT COLLETT.

Conchognathus Collett, 123; orthotype C. GRIMALDII Collett. A synonym of SIMENCHELYS Gill.

Photostomias Collett, 291; orthotype P. GUERNI Collett.

1548. COPE (1889). *Storms on the Adhesive Disk of Echeneis.* Amer. Naturalist, 1889, XXIII, 254–255.

EDWARD DRINKER COPE.

Opisthomyzon Cope, 255; orthotype ECHENEIS GLARONENSIS Wettstein (fossil).

1549. DAY (1889). *W. T. Blanford, the Fauna of British India, including Ceylon and Burmah; (Fishes).*

FRANCIS DAY.

Matsya Day, 292; orthotype ACANTHONOTUS ARGENTEUS Day. A substitute for ACANTHONOTUS (Tickell) Day, preoccupied.

1550. DEECKE (1889). *Ueber Fische aus verschiedenen Horizonten der Trias.* Palæontographica, 1888–89, XXV., 97–138.

JOHANNES ERNST WILHELM DEECKE.

Allolepidotus Deecke, 114; logotype PHOLIDOPHORUS RUPPELLI Bellotti (fossil).

Archæosemionotus Deecke, 121; orthotype A. CONNECTENS Deecke (fossil). Probably a synonym of SEMIONOTUS.

Prohalecites Deecke, 125; orthotype PHOLIDOPHORUS PORRO Bellotti (fossil).

1551. EIGENMANN & EIGENMANN (1889). *Notes from the San Diego Biological Laboratory. The Fishes of Cortez Banks, etc.* West. Amer. Sci., 1889, VI, 123–132; 147–150.

CARL H. EIGENMANN; ROSA SMITH EIGENMANN.

Paricelinus Eigenmann & Eigenmann, 131; orthotype P. HOPLITICUS Eigenmann & Eigenmann.

1552. EIGENMANN & EIGENMANN (1889). *Description of New Nematognathoid Fishes from Brazil.* West. Amer. Sci., VI, 8–10.

CARL H. EIGENMANN; ROSA SMITH EIGENMANN.

Microlepidogaster Eigenmann & Eigenmann, 8; orthotype M. PERFORATUS Eigenmann & Eigenmann.

1553. EIGENMANN & EIGENMANN (1889). *Preliminary Description of New Species and Genera of Characinidæ.* West. Amer. Sci., 1889, VI, 7–8.

CARL H. EIGENMANN; ROSA SMITH EIGENMANN.

Psectrogaster Eigenmann & Eigenmann, 7; orthotype P. RHOMBOIDES Eigenmann & Eigenmann.

1554. EIGENMANN & EIGENMANN (1889). *Preliminary Notes on South American Nematognathi,* II. Proc. Cal. Acad. Sci. (2), II, 28–56.

CARL H. EIGENMANN; ROSA SMITH EIGENMANN.

Acentronichthys Eigenmann & Eigenmann, 29; orthotype A. LEPTOS Eigenmann & Eigenmann.

Nemuroglanis Eigenmann & Eigenmann, 29; orthotype N. LANCEOLATUS Eigenmann & Eigenmann.

Farlowella Eigenmann & Eigenmann, 32; orthotype ACESTRA ACUS Kner. Substitute for ACESTRA Kner, preoccupied in Mollusks.

Oxyropsis Eigenmann & Eigenmann, 39; orthotype O. WRIGHTIANA Eigenmann & Eigenmann.

Hisonotus Eigenmann & Eigenmann, 41; orthotype H. NOTATUS Eigenmann & Eigenmann.

Parotocinclus Eigenmann & Eigenmann, 41; orthotype OTOCINCLUS MACULICAUDA Steind.

Panaque Eigenmann & Eigenmann, 44; orthotype CHÆTOSTOMUS NIGROLINEATUS Peters.

Delturus Eigenmann & Eigenmann, 45; orthotype D. PARAHYBÆ Eigenmann & Eigenmann.

Hemipsilichthys Eigenmann & Eigenmann, 46; orthotype XENOMYSTUS GOBIO Lütken. Substitute for XENOMYSTUS Lütken, preoccupied.

Tridens Eigenmann & Eigenmann, 53; orthotype T. MELANOPS Eigenmann & Eigenmann.

Pseudostegophilus Eigenmann & Eigenmann, 54; orthotype STEGOPHILUS NEMURUS Gthr.

Miuroglanis Eigenmann & Eigenmann, 56; orthotype M. PLATYCEPHALUS Eigenman & Eigenmann.

1555. EIGENMANN & EIGENMANN (1889). *A Revision of the Edentulous Genera of Curimatinæ.* Ann. N. Y. Acad. Sci., IV, 409–440.

CARL H. EIGENMANN; ROSA SMITH EIGENMANN.

Curimatella Eigenmann & Eigenmann, 415; logotype C. LEPIDURUS Eigenmann & Eigenmann.

Semitapicis Eigenmann & Eigenmann, 415; logotype CURIMATUS SPILURUS Gthr.

1556. FRAAS (1889). *Kopfstacheln von Hybodus und Acrodus sogenannte Ceratodus heteromorphus Ag.* Jahrb. Ver. Vaterl. Natur. Württenberg, XLV.

EBERHARD FRAAS (1862–1915).

Hybodonchus Fraas, 235; orthotype CERATODUS HETEROMORPHUS Ag. (part) (fossil).

Acrodonchus Fraas, 235; orthotype confused with CERATODUS HETEROMORPHUS Ag. (fossil).

1557. FRITSCH (1889). *Fauna der Gasköhle und der Kalksteine des Permformation Böhmens,* Vol. II.

ANTON JAN FRITSCH.

Tubulacanthus Fritsch, 113; orthotype T. SULCATUS Fritsch (fossil).

Brachiacanthus Fritsch, 113; orthotype B. SEMIPLANUS Fritsch (fossil). (Not BRACHYACANTHUS Egert.)

Platyacanthus Fritsch, 113; orthotype P. VENTRICOSUS Fritsch (fossil).

1558. GIGLIOLI (1889). *On a Supposed New Genus and Species of Pelagic Gadoid Fishes from the Mediterranean.* Proc. Zool. Soc. London, 1889. 328–332.

ENRICO HILLYER GIGLIOLI.

Eretmophorus Giglioli, 328; orthotype E. KLEINENBERGI Giglioli.

1559. GÜNTHER (1889). *On Some Fishes from Kilima-Njaro District.* Proc. Zool. Soc. London. 1889, 70–72.

ALBERT GÜNTHER.

Oreochromis Günther, 70; orthotype O. HUNTERI Gthr.

1560. GÜNTHER (1889). *Third Contribution to Our Knowledge of Reptiles and Fishes from the Upper Yang-tze-Kiang.* Ann. Mag. Nat. Hist., 1889; 6 ser. IV, 218–229.

ALBERT GÜNTHER.

Rhynchocypris Günther, 225; orthotype R. VARIEGATA Gthr.

Scombrocypris Günther, 226; orthotype S. STYANI Gthr.

Scomberopsis Günther, 226; orthotype S. STYANI Gthr.
Parapelecus Günther, 227; orthotype P. ARGENTEUS Gthr.

1561. GÜNTHER (1889). *Report on the Pelagic Fishes; in Report on the Scientific Results of the Voyage of H. M. S. "Challenger" during the years 1873-76,* Vol. XXXI, pt. 78.

ALBERT GÜNTHER.

Lepidothynnus Günther, 15; orthotype L. HUTTONI Gthr.
Auchenoceros Günther, 24; orthotype CALLOPTILUM PUNCTATUM Hutton. Substitute for CALLOPTILUM Hutton, preoccupied.
Halaphya Günther, 38; orthotype H. ELONGATA Gthr.

1562. HILGENDORF (1889). *Ueber eine Fischsammlung von Haiti, welche zwei neue Arten, Pœcilia tridens und Eleotris maltzani, enthält.* Sitzber. Ges. Naturf. Freunde Berlin, 1889. 51–55.

FRANZ (MARTIN) HILGENDORF.

Acropœcilia Hilgendorf, 52; orthotype PŒCILIA TRIDENS Hilgendorf.

1563. JAEKEL (1889). *Die Selachier aus dem oberen Muschelkalk Lothringens.* Abh. Geol. Spec. Elsass-Lothringen. III, 275–332.

OTTO (MAX JOHANNES) JAEKEL. (1863–).

Polyacrodus Jaekel, 321; orthotype HYBODUS POLYCYPHUS Jaekel (fossil).

1564. JORDAN & BOLLMAN (1889). *Descriptions of New Species of Fishes Collected at the Galapagos Islands and Along the Coast of the United States of Colombia, 1887–88.* Proc. U. S. Nat. Mus., 1889 (1890), XII, 149–183.

DAVID STARR JORDAN; CHARLES HARVEY BOLLMAN.

Xenocys Jordan & Bollman, 160; orthotype X. JESSIÆ Jordan & Bollman.
Bollmannia Jordan, 164; orthotype B. CHLAMYDES Jordan.
Runula Jordan & Bollman, 171; orthotype R. AZALEA Jordan & Bollman.
Engyophrys Jordan & Bollman, 176; orthotype E. SANCTI-LAURENTII Jordan & Bollman.

1565. JORDAN & EIGENMANN (1889). *A Review of the Sciænidæ of America and Europe.* Report U. S. Fish. Comm., 1886 (1889), XIV, 343–446.

DAVID STARR JORDAN; CARL H. EIGENMANN.

Corvula Jordan & Eigenmann, 379; orthotype JOHNIUS BATABANUS Poey.
Callaus Jordan, 401; orthotype CORVINA DELICIOSA Tschudi.

1566. NEWBERRY (1889). *The Paleozoic Fishes of North America.* Monogr. U. S. Geol. Surv., 1889 (issued August, 1890), XVI, 1–340.

JOHN STRONG NEWBERRY.

Heteracanthus Newberry, 65; orthotype H. POLITUS Newberry (fossil). Name preoccupied; replaced by GAMPHACANTHUS Miller.
Ganiodus Newberry, 67; orthotype G. HERTZERI Newberry (fossil).
Callognathus Newberry, 69; orthotype C. REGULARIS Newberry (fossil).
Sphenophorus Newberry, 91; orthotype S. LILLEYI Newberry (fossil).
Holonema Newberry, 92; orthotype PTERICHTHYS RUGOSUS Claypole (fossil).
Glyptaspis Newberry, 157; orthotype G. VERRUCOSUS Newberry (fossil).
Actinophorus Newberry, 174; orthotype A. CLARKII Newberry (fossil).
Mazodus Newberry, 178; orthotype M. KEPLERI Newberry (fossil).
Trachosteus Newberry, 188; orthotype DINICHTHYS MIRABILIS Newberry (fossil).
Stethacanthus Newberry, 198; orthotype S. TUMIDUS Newberry (fossil).

1567. OGILBY (1889). *Description of a New Genus and Species of Deep-Sea Fish from Lord Howe Island.* Proc. Linn. Soc. New S. Wales, 1888, 1313–1316 (1889).

James Douglas Ogilby.

Sternoptychides Ogilby, 1313; orthotype S. amabilis Ogilby.

1568. PFEFFER (1889). *Uebersicht der von Herrn Dr. Franz Stuhlmann in Aegypten, auf Zanzibar und dem gegenüberliegenden Festlande gesammelten Reptilien, Amphibien, Fische,* etc. Jahrb. Wiss. Anstalt Hamburg, VI, Pt. 2, 1–36.

Georg Johann Pfeffer (1854–).

Anoplopterus Pfeffer, 15; orthotype A. uranoscopus Pfeffer. A synonym of Amphilius Gthr.

1569. SCHULZE (1889). *Fauna piscium Germaniæ. Verzeichniss der Fische der Stromgebiete der Donau, des Rheines, der Ems, Weser, Elbe, Oder, Weichsel, des Pregels und der Memel.* Jahresber. Naturw. Ver. Magdeburg, 1889, 137–213.

Erwin Schulze (1861–).

Liparus Schulze, 61; orthotype Cyprinus rutilus L. A synonym of Rutilus Raf. if this unverified citation is correct.

Epitomynis Schulze, 174; logotype Salmo hucho L. A needless substitute for Hucho and Salvelinus.

Metallites Schulze, 184; orthotype Cyprinus rutilus L. A synonym of Rutilius Raf.

Epitrachys Schulze, 209; orthotype Perca fluviatilis L. An absurdly needless synonym of Perca L.

1570. VAILLANT (1889). *Sur les poissons des eaux douces de Borneo.* Congr. Intern. Zool. Paris, 1889, 81–82, Comptes Rendus.

Léon Vaillant.

Lepidoglanis Vaillant, 82; orthotype L. monticola Vaillant.

1571. ROHON (1889). *Ueber unter-Silurische Fische.* Mélange, Geol. Pal.; Acad. Sci. St. Petersb., I, 7–15.

Joseph Victor Rohon.

Gyrolepidotus Rohon, 8; orthotype G. schmidi Rohon (fossil).

1572. VINCIGUERRA (1889). *Viaggio di Leonardo Fea in Burmania e regioni vicine: Pesci.* Ann. Mus. Civ. Storia Nat. Genova, II, ser. 9, 129–362.

Decio Vinciguerra.

Scaphiodonichthys Vinciguerra, 285; orthotype S. burmanicus Vinciguerra.

Helgia Vinciguerra, 330; logotype Homaloptera bilineata Blyth.

1574. WOODWARD (1889). *Preliminary Notes on Some New and Little Known British Jurassic Fishes.* Geol. Mag., VI, 448–455.

Arthur Smith Woodward.

Leedsia Woodward, 451; orthotype L. problematica Woodw. (fossil). Name preoccupied; replaced by Leedsichthys Woodw. (1889).

1575. WOODWARD (1889). *Notes on Some New and Little Known British Jurassic Fishes.* Ann. Mag. Nat. Hist., 6 ser., IV, 405–407.

Arthur Smith Woodward.

Leedsichthys Woodward, 406; orthotype LEEDSIA PROBLEMATICUS Woodw. (fossil). Substitute for LEEDSIA Woodw., preoccupied.

Browneichthys Woodward, 407; orthotype B. ORNATUS Woodw. (fossil).

1576. WOODWARD (1889). *On Atherstonia, a New Genus of Palæoniscid Fishes from the Karoo Formation of South Africa, and a Tooth of Ceratodus from the Stormberg Beds of the Orange Free State.* Ann. Mag. Nat. Hist., 1899, 6 ser., IV, 239-243.

ARTHUR SMITH WOODWARD.

Atherstonia Woodward, 239; orthotype A. SCUTATA Woodw. (fossil).

1577. WOODWARD (1889). *Catalogue of the Fossil Fishes in the British Museum of Natural History, I, 1889.*

ARTHUR SMITH WOODWARD.

Mesolophodus Woodw., 61; orthotype M. PROBLEMATICUS Woodw. (fossil).

Sclerorhynchus Woodward, 76; orthotype S. ATAVUS Woodw. (fossil).

Pleuroplax Woodward, 173; orthotype PLEURODUS RANKINEI Ag. (fossil). Substitute for PLEURODUS Hancock & Atthey, preoccupied.

Cantioscyllium Woodward, 347; orthotype C. DECIPIENS Woodw. (fossil).

Orthacodus Woodward, 349; orthotype LAMNA LONGIDENS Ag. (fossil). Substitute for SPHENODUS Ag., regarded as preoccupied by SPHENODON Gray.

Scapanorhynchus Woodward, 351; logotype RHYNCHOGNATHUS LEWISI Davis (fossil). A substitute for RHYNCHOGNATHUS Davis, preoccupied. The fossil homologue of the living shark, MITSUKURINA Jordan.

1578. WOODWARD (1889). *On the Palæontology of Sturgeons.* Proc. Geol. Assoc. London, 1889, XI, 24-44.

ARTHUR SMITH WOODWARD.

Pholidurus Woodward, 44; orthotype P. DISJECTUS Woodw. (fossil).

1890.

1579. ALCOCK (1890). *On the Bathybial Fishes Collected in the Bay of Bengal During the Season 1888-1890.* Ann. Mag. Nat. Hist., 1890, VI, ser. 6, 197-222.

ALFRED WILLIAM ALCOCK.

Bathyseriola Alcock, 202; orthotype B. CYANEA Alcock.

Ponerodon Alcock, 203; orthotype P. VASTATOR Alcock.

Paroneirodes Alcock, 206; orthotype P. GLOMEROSUS Alcock.

Tauredophidium Alcock, 212; orthotype T. HEXTII Alcock.

Thaumastomias Alcock, 220; orthotype T. ATROX Alcock.

1580. ALCOCK (1890). *On the Bathybial Fishes of the Arabian Sea, Obtained During the Season 1889-1890.* Ann. Mag. Nat. Hist., 1890, VI, ser. 6, 295-311.

ALFRED WILLIAM ALCOCK.

Paradicrolene Alcock, 297; orthotype P. VAILLANTI Alcock.

Monomitopus Alcock, 297; orthotype SIREMBO NIGRIPINNIS Alcock.

Dermatorus Alcock, 298; orthotype D. TRICHIURUS Alcock.

Scopelogenys Alcock, 302; orthotype S. TRISTIS Alcock.

Narcetes Alcock, 305; orthotype N. ERIMELAS Alcock.

Aulastomatomorpha Alcock, 307; orthotype A. PHOSPHEROPS Alcock.

Promyllantor Alcock, 310; orthotype P. PURPUREUS Alcock.

1581. ALCOCK (1890). *Descriptions of Some New and Rare Species of Fishes from the Bay of Bengal, Obtained During the Season of 1888–1889.* Journ. Asiat. Soc. Bengal, 1890, LVIII, 296–305.

ALFRED WILLIAM ALCOCK.

Parascombrops Alcock, 296; orthotype P. PELLUCIDUS Alcock.

Bathymyrus Alcock, 305; orthotype B. ECHINORHYNCHUS Alcock.

1582. ALCOCK (1890). *List of Pleuronectidæ Obtained in the Bay of Bengal in 1888 and 1889, with Descriptions of New and Rare Species.* Journ. Asiat. Soc. Bengal, 1889, LVII, 279–295, 293–305.

ALFRED WILLIAM ALCOCK.

Scianectes Alcock, 284; orthotype S. MACROPHTHALMUS Alcock.

1583. ALCOCK (1890). *On Some Undescribed Shore-Fishes from the Bay of Bengal.* Ann. Mag. Nat. Hist., 1890, VI, ser. 6, 425–443.

ALFRED WILLIAM ALCOCK.

Psettylis Alcock, 437; logotype P. PELLUCIDA Alcock.

1584. BEAN (1890). *New Fishes Collected off the Coast of Alaska and the Adjacent Region Southward.* Proc. U. S. Nat. Mus., 1890, XIII, 37–45.

TARLETON HOFFMAN BEAN.

Bothrocara Bean, 39; orthotype B. MOLLIS Bean.

Poroclinus Bean, 40; orthotype P. ROTHROCKI Bean.

Dasycottus Bean, 42; orthotype D. SETIGER Bean.

Malacocottus Bean, 43; orthotype M. ZONURUS Bean.

1585. DAVIS (1890). *On the Fossil Fishes of the Cretaceous Formations of Scandinavia.* Trans. Roy. Dublin Soc., IV, 363–434.

JAMES WILLIAM DAVIS.

Bathysoma Davis, 424; orthotype B. LUTKENI Davis (fossil).

1586. EIGENMANN & EIGENMANN (1890). *Additions to the Fauna of San Diego.* Proc. Cal. Ac. Sci., III, 1–24.

CARL H. EIGENMANN; ROSA SMITH EIGENMANN.

Stenobrachius Eigenmann & Eigenmann, 4; orthotype S. LEUCOPSARUM Eigenmann & Eigenmann. A synonym of NANNOBRACHIUM Gthr.

Catablemella Eigenmann & Eigenmann, 3, 24; orthotype C. BRACHYCHIR Eigenmann & Eigenmann. A synonym of NOTOSCOPELUS Gthr. (MACROSTOMA Risso).

1587. FATIO (1890). *Faune des Vertebrés en Suisse.* V. Histoire Naturelle des Poissons.

VICTOR FATIO.

Spirlingus Fatio, 389; orthotype CYPRINUS BIPUNCTATUS Bloch. An ally or synonym of BLICCA.

1588. FORBES (1890). *A New Genus of Percidæ from New Zealand.* Trans. N. Z. Inst., XXII, for 1890.

H. O. FORBES.

Plagiogeneion Forbes. 273; orthotype THERAPON RUBIGINOSUS Hutton.

1589. GARMAN (1890). *On the Species of the Genus Anostomus.* Bulletin Essex Inst., XXII, 15–23.

SAMUEL GARMAN.

Schizodontopsis Garman, 19; logotype S. PROXIMUS Garman.

1590. GARMAN (1890). *On a Genus and Species of the Characines (Henochilus wheatlandi, etc.).* Bull. Essex Instit., 1890, XXII, 49–52.

SAMUEL GARMAN.

Henochilus Garman, 49; orthotype H. WHEATLANDI Garman.

1591. GILBERT (1890). *A Preliminary Report on the Fishes Collected by the Steamer "Albatross" on the Pacific Coast of North America during the Year 1889, etc.* Proc. U. S. Nat. Mus., 1890, XIII, 49–126.

CHARLES HENRY GILBERT.

Leuroglossus Gilbert, 57; orthotype L. STILBIUS Gilbert. Closely allied to GLOSSANODON (LIOGLOSSUS) Guichenot; perhaps the same.

Calotomus Gilbert, 70; orthotype C. XENODON Gilbert. A synonym of LEPTOSCARUS Sw.

Radulinus Gilbert, 88; orthotype R. ASPRELLUS Gilbert.

Bathyagonus Gilbert, 89; orthotype B. NIGRIPINNIS Gilbert.

Xenochirus Gilbert, 90; orthotype X. TRIACANTHUS Gilbert. Name preoccupied; replaced by XENERETMUS Gilbert.

Gillellus Gilbert, 98; orthotype G. SEMICINCTUS Gilbert.

Cryptotrema Gilbert, 101; orthotype C. CORALLINUM Gilbert.

Plectobranchus Gilbert, 102; orthotype P. EVIDES Gilbert.

Lucioblennius Gilbert, 103; orthotype L. ALEPIDOTUS Gilbert.

Aprodon Gilbert, 106; orthotype A. CORTEZIANA Gilbert.

Lycodapus Gilbert, 107; orthotype L. FIERASFER Gilbert.

Lioglossina Gilbert, 122; orthotype L. TETROPHTHALMA Gilbert.

1592. GILBERT (1890). *Supplementary List of Fishes Collected at Galapagos Islands and Panama, with Description of One New Genus and Three New Species.* Proc. U. S. Nat. Mus., 1890, XIII, 449–455.

CHARLES HENRY GILBERT.

Dialommus Gilbert, 452; orthotype D. FUSCUS Gilbert.

1593. GILL (1890). *Osteological Characteristics of the Family Murænosocidæ.* Proc. U. S. Nat. Mus., XIII.

THEODORE GILL.

Congresox Gill, 231; orthotype CONGER TALABON Cuv.

1594. HERZENSTEIN (1890). *Ichthyologische Bemerkungen . . . Mélanges Biologiques.* Bull. Ac. Sci. St. Petsb., XIII.

SALOMON MARKOVICH HERZENSTEIN.

Cheiragonus Herzenstein, 116; orthotype HYPSAGONUS GRADIENS Herzenstein = ASPIDOPHORUS QUADRICORNIS Cuv. & Val. A synonym of HYPSAGONUS Gill.

Dinogunellus Herzenstein, 119; orthotype STICHÆUS GRIGORJEWI Herzenstein.

1595. HUTTON (1890). *List of New Zealand Fishes.* Proc. N. Z. Inst., XXII.

FREDERICK WOLLASTON HUTTON.

Neptotichthys Hutton, 278; orthotype DITREMA VIOLACEA Hutton.

1596. JAEKEL (1890). *Ueber Phaneropleuron und Hemictenodus n. g.* Sitzber. Ges. Naturf. Freunde Berlin, 1890, 1–8.

OTTO (MAX JOHANNES) JAEKEL.

Hemictenodus Jaekel, 7; logotype CTENODUS OBLIQUUS Hancock & Atthey (fossil). As restricted by Traquair, 1890, a synonym of SAGENODUS.

1597. JORDAN (1890). *List of Fishes Obtained (by the "Albatross") in the Harbor of Bahia and in Adjacent Waters.* Proc. U. S. Nat. Mus., XIII.

DAVID STARR JORDAN.

Verecundum Jordan, 330; orthotype V. RASILE Jordan.

1598. JORDAN (1890). *A Review of the Labroid Fishes of America and Europe.* Rept. U. S. Fish Comm., XV, for 1887 (1890).

DAVID STARR JORDAN.

Lappanella Jordan, 622; orthotype CTENOLABRIS IRIS Cuv. & Val.

Xyrula Jordan, 656; orthotype XYRICHTHYS JESSIÆ Jordan.

1599. JORDAN & EIGENMANN. *A Review of the Genera and Species of Serranidæ Found in the Waters of America and Europe.* Bull. U. S. Fish Comm. for 1888 (1890), VIII.

DAVID STARR JORDAN; CARL H. EIGENMANN.

Gilbertia Jordan & Eigenmann, 333, 346; orthotype PLECTROPOMA SEMICINCTUM Cuv. & Val. A synonym of HYPOPLECTRODES Gill, an undescribed genus, known by its indicated type.

Garrupa Jordan & Eigenmann, 353; orthotype SERRANUS NIGRITUS Holbrook.

Serranellus Jordan & Eigenmann, 399; orthotype PERCA SCRIBA L.

1600. LOHEST (1890). *Recherches sur les Poissons des Terrains Paléoziques de Belgique. Poissons des Psammites du Condroz, Famennien Supérieur.* Ann. Soc. Geol. Belg., XV, 112–203.

MAXIMIN LOHEST.

Pentagonolepis Lohest, 159; orthotype P. KONINCKI Lohest (fossil).

1601. RENAULT & ZEILLER (1890). *La Flore Fossile de Commentry.* St. Etienne, 1890.

B. RENAULT; R. ZEILLER.

Fayolia Renault & Zeiller, orthotype not named (fossil). Egg: the spiral egg-case of a HETERODONTID Shark, mistaken for a plant. (Quoted from Meunier).

1602. ROHON (1890). *Die Jura-Fische von Ust-Balei in Ost-Sibirien.* Mem. Ac. Petersb., XXXVIII, no. 1, 1–15.

JOSEF VICTOR ROHON.

Palæoniscinotus Rohon, 8; logotype P. CZEKANOWSKII Rohon (fossil).

Baleiichthys Rohon, 13; logotype B. GRACIOSA Rohon (fossil). A synonym of PHOLIDOPHORUS Ag.

1603. SCHILTHUIS (1890). *On a Collection of Fishes from the Congo; with Descriptions of Some New Species.* Tijdschr. Nederl. Dierk. Ver., 1890–92, 2 ser., III, 83–92.

LOUISE SCHILTHUIS.

Lamprologus Schilthuis, 85; orthotype L. CONGOENSIS Schilthuis.

1604. TRAQUAIR (1890). *On Phlyctænius, a New Genus of Coccosteidæ.* Geol. Mag., 1890, III, dec. 7, 55–60.

RAMSAY HEATLEY TRAQUAIR.

Phlyctænius Traquair, 55; orthotype COCCOSTEUS ACADIUS Whiteaves (fossil). Name regarded as preoccupied; replaced by PHLYCTÆNASPIS Traquair.

1605. TRAQUAIR (1890). *Note on Phlyctænius, a New Genus of Coccosteidæ.* Geol. Mag., VII, 144.

RAMSAY HEATLEY TRAQUAIR.

Phlyctænaspis Traquair, 144; orthotype COCCOSTEUS ACADICUS Whiteaves. Substitute for PHLYCTÆNIUS Traquair, regarded as preoccupied by PHLYCTÆNIUM Zittel.

1606. TRAQUAIR (1890). *List of the Fossil Dipnoi and Ganoidei of Fife and the Lothian.* Proc. Roy. Phys. Soc. Edinburgh, 1890, XVII, 385–400.

RAMSAY HEATLEY TRAQUAIR.

Drydenius Traquair, 399; orthotype D. INSIGNIS Traquair (fossil).

1507. TRAQUAIR (1890). *Observations on Some Fossil Fishes from the Lower Carboniferous Rocks of the Eskdale, Dumfriesshire.* Ann. Mag. Nat. Hist., 1890, 6 ser., VI, 491–494.

RAMSAY HEATLEY TRAQUAIR.

Benedenichthys Traquair, 492; orthotype PALÆONISCUS DENEENSIS Van Beneden (fossil). A substitute for BENEDENIUS Traquair, 1878, preoccupied.

Mesopoma Traquair, 493; logotype CANOBIUS PULCHELLUS Traquair (fossil).

1608. TRAQUAIR (1890). *On the Fossil Fishes Found at Achanarras Quarry, Caithness.* Ann. Mag. Nat. Hist., 1890, VI, ser. 6, 479–486.

RAMSAY HEATLEY TRAQUAIR.

Palæospondylus Traquair, 485; orthotype P. GUNNII Traquair (fossil).

1609. WHITEFIELD (1890). *Observations on a Fossil Fish from the Eocene Beds of Wyoming.* Bull. Amer. Mus. Nat. Hist., 1890, III, 117-120.

ROBERT PARR WHITEFIELD (1828–1910).

Protocatostomus Whitefield, 117; orthotype P. CONSTABELI Whitefield (fossil). A synonym of NOTOGONEUS Cope.

1610. WOODWARD (1890). *The Fossil Fishes of the Hawkesbury Series at Gosford.* Mem. Geol. Surv. New South Wales, Palæont., 1890, no. 4, 1–55.

ARTHUR SMITH WOODWARD.

Gosfordia Woodward, 4; orthotype G. TRUNCATA Woodw. (fossil).

Apateolepis Woodward, 12; orthotype A. AUSTRALIS Woodw. (fossil).

Pristisomus Woodward, 32; orthotype P. LATUS Woodw. (fossil).

1611. WOODWARD (1890). *On Some Upper Cretaceous Fishes of the Family Aspidorhynchidæ.* Proc. Zool. Soc. London, 1890, 629–636.

ARTHUR SMITH WOODWARD.

Apateopholis Woodward, 634; orthotype RHINELLUS LANIATUS Davis (fossil).

1612. WOODWARD (1890). *A Synopsis of the Fossil Fishes from the English Lower Oölites.* Proc. Geol. Assoc., XI, 289–306.

ARTHUR SMITH WOODWARD.

Scaphodus Woodward, 301; orthotype S. HETEROMORPHUS Woodw. (fossil).

1613. ZIGNO (1890). *Nuove aggiunte all' ittiofauna dell' epoca eocena.* Mem. Instit. Veneto, 1890, XXIII, 9–33.

ACHILLE DE ZIGNO.

Aulorhamphus Zigno, 19; orthotype CALAMOSTOMA BOLCENSIS Steind. (fossil). Replaces CALAMOSTOMA Steind., preoccupied.

Histiocephalus Zigno, 29; orthotype H. BASSANI Zigno (fossil).

1891.

1614. ALCOCK (1891). *On the Deep-Sea Fishes Collected by the "Investigator" in 1890–91.* Ann. Mag. Nat. Hist., 1891, 6 ser., VIII, 16–34, 119–138.

ALFRED WILLIAM ALCOCK.

Malthopsis Alcock, 26; orthotype M. LUTEUS Alcock.
Halicmetus Alcock, 27; orthotype H. RUBER Alcock.
Lamprogrammus Alcock, 32; orthotype L. NIGER Alcock.
Bathyclupea Alcock, 130; orthotype B. HOSKYNII Alcock.
Dysommopsis Alcock, 137; orthotype D. MUCIPARUS Alcock.

1615. COMPTER (1891). *A Fossil Fish from the Muschelkalk of Jena.* Zeitsch. f. Naturw., LXIV.

G. COMPTER.

Dolichopterus Compter, 41; orthotype D. VOLITANS Compter (fossil).

1616. COPE (1891). *On Some New Fishes from South Dakota.* Amer. Naturalist, XXV.

EDWARD DRINKER COPE.

Gephyrura Cope, 654; orthotype G. CONCENTRICA Cope (fossil).
Proballostomus Cope, 655; orthotype P. LONGULUS Cope (fossil).
Oligoplarchus Cope, 656; orthotype O. SQUAMIPINNIS Cope (fossil).

1617. COPE (1891). *On the Characters of Some Paleozoic Fishes.* Proc. U. S. Nat. Mus., 1891, XIV, 447–463.

EDWARD DRINKER COPE.

Styptobasis Cope, 447; orthotype S. KNIGHTIANA Cope (fossil).

1618. EIGENMANN, R. S. (1891). *New California Fishes.* Amer. Naturalist, XXV.

ROSA SMITH EIGENMANN.

Perkinsia Rosa Smith Eigenmann, 153; orthotype P. OTHONOPS Eigenmann. Near ETRUMEUS Blkr.

1619. EIGENMANN & EIGENMANN (1891). *Additions to the Fauna of San Diego.* Proc. Calif. Acad. Sci. (2), III, 1–24.

CARL H. EIGENMANN; ROSA SMITH EIGENMANN.

Diaphus Eigenmann & Eigenmann, 4; orthotype SCOPELUS ENGRAULIS Gthr.
Tarletonbeania Eigenmann & Eigenmann, 6; orthotype T. TENUA Eigenmann & Eigenmann.

1620. FELIX (1891). *(Otomitla.)* Palæontographica, XXXVII.

JOHANNES PAUL FELIX (1859–).

Otomitla Felix, 189; orthotype O. SPECIOSA Felix (fossil).

1621. GILBERT (1891). *Descriptions of Apodal Fishes from the Tropical Pacific.* Proc. U. S. Nat. Mus., 1891, XIV, 347–354.

CHARLES HENRY GILBERT.

Xenomystax Gilbert, 348; orthotype X. ATRARIUS Gilbert.
Ilyophis Gilbert, 351; orthotype I. BRUNNEUS Gilbert.

1622. GILBERT (1891). *Descriptions of Thirty-four New Species of Fishes Collected in 1888 and 1889, Principally among the Santa Barbara Islands and in the Gulf of California.* Proc. U. S. Nat. Mus., 1891, XIV, 539–566.

CHARLES HENRY GILBERT.

Chriolepis Gilbert, 557; orthotype C. MINUTILLUS Gilbert.

1623. GILL (1891). *On Eleginus of Fischer, Otherwise Called Tilesia or Pleurogadus.* Proc. U. S. Nat. Mus., XIV.

THEODORE GILL.

Eleginops Gill, 305; orthotype ELEGINUS MACLOVINUS Cuv. & Val. A substitute for ELEGINUS Cuv. & Val., preoccupied by ELEGINUS Fischer, 1813.

1624. GILL (1891). *On the Genera Labrichthys and Pseudolabrus.* Proc. U. S. Nat. Mus., XIV.

THEODORE GILL.

Pictilabrus Gill, 403; orthotype LABRUS LATICLAVIUS Rich.

1625. HOLMBERG (1891). *Sobre algunos peces nuevos o poco conocidos de la Republica Argentina.* Rev. Argent., I, 1891, 180–193.

EDUARDO LADISLAO HOLMBERG.

Chalcinopelecus Holmberg, 190; orthotype, C. ARGENTINUS Holmberg. A synonym of PSEUDOCORYNOPOMA Perugia, of the same year.

1626. HOLT (1891). *Survey of Fishing Grounds, West Coast of Ireland. Preliminary Note on the Fish Obtained During the Cruise of the "Fingal," 1890.* Sci. Dublin Soc. (2), VII, 121–123.

ERNEST W. L. HOLT.

Nettophichthys Holt, 122; orthotype N. RETROPINNATUS Holt.

1627. KRAMBERGER (1891). *Palæichthyolozki prilozi (Collectæ palæoichthyologicæ).* Dis. II, Rad. Jugoslav. Akad., 1891, 106, 58–129.

DRAGUTIN GORJANOVIC KRAMBERGER.

Apostasis Kramberger, 104; orthotype ACANUS GAUDRYI Kramberger (fossil).

1628. LÜTKEN (1891). *Om en med stegophiler og trichomycterer beslægtet sydamerikansk mallefisk (Acanthopoma annectens Ltk., n. g. et sp.).* Vid. Meddel. Kjobenhavn. 1891, 53–60.

CHRISTIAN FREDERIK LÜTKEN.

Acanthopoma Lütken, 53; orthotype A. ANNECTENS Lütken.

1629. MEUNIER (1891). *Note recticative sur un fossile corallier recemment decrit.* Comptes Rendus Acad. Sci. Paris, CXII, 1891, 1154–5.

STANISLAS MEUNIER.

Vaillantoonia Meunier, 1155; orthotype CYCADOSPADIX VIREI Meunier (fossil). Egg-case of a CHIMÆROID from Coralline Jurassic deposits at Verdun. It was first described in the Comptes Rendus 1891, p. 356, as a species of fossil CYCAD, but it was shown later by Dr. Vaillant to be a CHIMÆROID egg-case.

1630. PERUGIA (1891). *Appunti sopra alcuni pesci sud-americani conservati nel Museo Civico di Storia Naturale di Genova.* Ann. Mus. Civ. Storia Nat. Genova, 1891, 2 ser., X, 605–657 (April).

ALBERTO PERUGIA.

Pseudocorynopoma Perugia, 646; orthotype P. DORIÆ Perugia (April). Replaces BERGIA Steind. of July, 1891.

1631. SAUVAGE (1891). *(Poissons fossiles). Études des gîtes minéraux de la France. Bassin houiller et permien d'Autun et d'Epinac.* Fasc. III. 31 p.

HENRI ÉMILE SAUVAGE.

Ædua Sauvage, 16; orthotype Æ. GAUDRYI Sauvage (fossil).
Archæoniscus Sauvage, 19; orthotype A. ROCHEI Sauvage (fossil).

1632. SAUVAGE (1891). *Note sur quelques poissons du Lias supérieur de l'Yonne, XLV.*

HENRI ÉMILE SAUVAGE.

Parathrissops Sauvage, 37; orthotype P. MILLOTI Sauvage (fossil). A synonym of EUTHYNOTUS.

1633. STEINDACHNER (1891). *Ichthyologische Beiträge, XV.* S. B. Ak. Wiss. Wien, C.

FRANZ STEINDACHNER.

Bergia Steindachner, 173 (July 1891); orthotype B. ALTIPINNIS Steind. = PSEUDOCORYNOPOMA DORIÆ Perugia. A synonym of PSEUDOCORYNOPOMA Perugia. April, 1891. BERGIA is preoccupied in Insects (Scott, 1881).

1634. TELLER (1891). *Ueber den Schadel eines fossilen Dipnoers, Ceratodus sturii, n. sp. aus den Schlichten den oberen Trias der Nordalpen.* Abh. Geol. Reichsanstalt, Wien, 1891, XV, pt. 3, 1–39.

FRIEDRICH JOSEPH TELLER (1852–1913).

Epiceratodus Teller, 37; orthotype CERATODUS FORSTERI Krefft (Australian species). It is not certain whether this living species from Australia is identical or not with the fish intended by the loosely written account of NEOCERATODUS BLANCHARDI Castelnau, 1876. EPICERATODUS is probably a synonym of NEOCERATODUS.

1635. VAILLANT (1891). *Note sur un nouveau genre de Siluroïdes (Diastatomycter) de Borneo.* Bull. Soc. Philom. Paris, 1891, VIII, ser. 3, 181–182.

LÉON LOUIS VAILLANT.

Diastatomycter Vaillant, 182; orthotype D. CHAPERI Vaillant. A synonym of HEMISILURUS Blkr.

1636. WALCOTT (1891). *Supposed Trenton Fossil Fish.* Amer. Geol., VIII, 178–180. (Editorial comment on Walcott's discoveries at Canyon City, Colo.)

Palæchimæra Walcott, 178; orthotype P. PRISMA Walcott (fossil). Name only; called DICTYORHABDUS in 1892.

1637. WOODWARD (1891). *The Devonian Fish-Fauna of Spitsbergen.* Ann. Mag. Nat. Hist., 1891, VI, ser. 8, 1–15.

ARTHUR SMITH WOODWARD.

Porolepis Woodward, 8; orthotype GYROPTYCHIUS POSNANIENSIS Kade (fossil).
Asteroplax Woodward, 11; orthotype A. SCABRA Woodw. (fossil).

1638. WOODWARD (1891). *Catalogue of the Fossil Fishes in the British Museum Nat. Hist., II.*

ARTHUR SMITH WOODWARD.

Palæomylus Woodw., 39; logotype RHYNCHODUS FRANGENS Newberry (fossil).
Elasmodectes (Newton) Woodward, 88; orthotype ELASMOGNATHUS WILLETTII Newton. A substitute for ELASMOGNATHUS Newton, preoccupied.
Apateacanthus Woodward, 118; orthotype PRISTACANTHUS VETUSTUS Clarke.
Glyptognathus Woodward, 390; orthotype GLYPTOPOMUS MINOR Ag.

Uropteryx (Agassiz) Woodward, 541; orthotype PLATYSOMUS STRIATUS Ag. = STROMATEUS GIBBOSUS Blainv. (fossil). Name only, noted in synonymy from Agassiz ms. A synonym of STORTES Gistel, which replaces PLATYSOMUS Ag., preoccupied.

1892.

1639. ALCOCK (1892). *Natural History Notes from H. M. Indian Marine Survey Steamer "Investigator," Lieut. G. S. Gunn, R. N., Commanding. Series II, no. 5. On the Bathybial Fishes Collected During the Season of 1891-2.* Ann. Mag. Nat. Hist., 1892 (6), IX, 345-365.

ALFRED WILLIAM ALCOCK.

Hephthocara Alcock, 349; orthotype H. SIMUM Alcock.

1640. BELLOTTI (1892). *Un nuovo Siluroide giapponese.* Atti. Soc. Ital., XXXIV, 99-101.

CRISTOFORO BELLOTTI.

Neobagrus Bellotti, 100; orthotype N. FUSCUS Bellotti = LIOBAGRUS REINI Hilgendorf. A synonym of LIOBAGRUS Hilgendorf.

1641. BOULENGER (1892). *On Some New or Little Known Fishes Obtained by Dr. J. W. Evans and Mr. Spencer Moore, during Their Recent Expedition to the Province of Matto Grosso, Brasil.* Ann. Mag. Nat. Hist., (6), X, 1892, 9-12.

GEORGE ALBERT BOULENGER.

Brachychalcinus Boulenger, 11; orthotype B. RETROSPINA Boulenger.

1642. BOULENGER (1892). *Description of a New Blennioid Fish from Kamtschatka.* Proc. Zool. Soc. London, 1892, 583-585.

GEORGE ALBERT BOULENGER.

Blenniophidium Boulenger, 583; orthotype B. PETROPAULI Boulenger = OPHIDIUM OCELLATUM Tilesius. A synonym of OPISTHOCENTRUS Kner (1868).

1643. CLAYPOLE (1892). *A New Gigantic Placoderm from Ohio.* Am. Geol., X, 1892, 1-4.

EDWARD WALLER CLAYPOLE.

Gorgonichthys Claypole, 2; orthotype G. CLARKI Claypole. A synonym of DINICHTHYS Newberry.

1644. EIGENMANN (1892). *The Percopsidæ of the Pacific Slope.* Science, XX, 1892, 233-234.

CARL H. EIGENMANN.

Columbia Eigenmann, 234; orthotype C. TRANSMONTANA Eigenmann.

1645. GARMAN (1892). *The Discoboli. Cyclopteridæ, Liparopsidæ, and Liparididæ.* Mem. Mus., C. Z., XIV, no. 2, 1892, 1-96.

SAMUEL GARMAN.

Cyclopteroides Garman, 37; orthotype C. GYRINOPS Garman.

Liparops Garman, 42; orthotype CYCLOPTERUS STELLERI Pallas.

1646-1647. HERZENSTEIN (1892). *Ichthyologische Bemerkungen aus dem Zoologischen Museum der Kaiserlichen Akademie der Wissenschaften.* Mel. Biol., XIII, 1892, 219-235.

SALOMON MARKOVICH HERZENSTEIN.

Argyrocottus Herzenstein, 219; orthotype A. ZANDERI Herzenstein.

Gymnodiptychus Herzenstein, 225; orthotype DIPTYCHUS DYBOWSKII Kessler.

Acanthogobio Herzenstein, 228; orthotype A. GUENTHERI Herzenstein. A synonym of HEMIBARBUS Blkr.

Pungtungia Herzenstein, 231; orthotype P. HERZI Herzenstein.

1648. JORDAN & DAVIS (1892). *A Preliminary Review of the Apodal Fishes or Eels Inhabiting the Waters of America and Europe.* Rept. U. S. Fish Comm., 1888, 581–677 (1892).

DAVID STARR JORDAN; BRADLEY MOORE DAVIS (1871–).

Rabula Jordan & Davis, 590; orthotype MURÆNA AQUÆ-DULCIS Cope.

Bascanichthys Jordan & Davis, 621; orthotype CŒCULA BASCANIUM Jordan.

Quassiremus Jordan & Davis, 622; orthotype OPHICHTHYS EVIONTHAS Jordan & Bollman.

Scytalichthys Jordan & Davis, 635; orthotype OPHICHTHYS MIURUS J. & G.

Ahlia Jordan & Davis, 639; orthotype MYROPHIS EGMONTIS Jordan.

Venefica Jordan & Davis, 651; orthotype NETTASTOMA PROCERUM G. & B.

Gordiichthys Jordan & Davis, 644; orthotype G. IRRETITUS Jordan & Davis.

Avocettina Jordan & Davis, 655; orthotype NEMICHTHYS INFANS Gthr.

1649. LÜTKEN (1892). *Spolia Atlantica. Scopelini Musei Zoologici Universitatis Hauniensis. Bidrag til Kundskab om det aabne Havs Laxesild eller Scopeliner.* Vid. Selsk. Skr. (6), VII, 1892, 223–297.

CHRISTIAN FREDERIK LÜTKEN.

Rhinoscopelus Lütken, 242; orthotype SCOPELUS COCCOI Cocco.

Pseudoscopelus Lütken, 285; orthotype P. SCRIPTUS Lütken.

1650. MILLER (1892). *North American Geology and Palæontology.* (First Appendix, 665–768.)

SAMUEL A. MILLER (1836–1897).

Eczematolepis Miller, 715; orthotype ACANTHOLEPIS PUSTULOSUS Newberry (fossil). Substitute for ACANTHOLEPIS Newberry, preoccupied.

Gamphacanthus Miller, 715; orthotype HETERACANTHUS POLITUS Newberry (fossil). Substitute for HETERACANTHUS Newberry, preoccupied.

Haplolepis Miller, 715; orthotype MECOLEPIS CORRUGATA Newberry (fossil). Substitute for MECOLEPIS and EURYLEPIS Newberry, both preoccupied.

Millerichthys Miller, 716; orthotype PTERICHTHYS MILLERI Ag. (fossil). A synonym of PTERICHTHYODES Blkr., being also a substitute for PTERICHTHYS Ag., 1843, preoccupied.

Lispognathus Miller, 716; orthotype LIOGNATHUS SPATULATUS Newberry (fossil). Substitute for LIOGNATHUS Newberry, preoccupied by LEIOGNATHUS Lac., 1803.

Icanodus Miller, 716; orthotype TOMODUS CONVEXUS St. John & Worthen. Substitute for TOMODUS Davis, preoccupied.

Œstophorus Miller, 716; orthotype SPHENOPHORUS LILLEYI Newberry (fossil). Substitute for SPHENOPHORUS Newberry, preoccupied.

Tegeolepis Miller, 717; orthotype ACTINOPHORUS CLARKII Newberry (fossil). Substitute for ACTINOPHORUS Newberry, 1888, preoccupied.

Ponerichthys Miller, 717; orthotype DINICHTHYS TERRELLI Newberry (fossil). A synonym of DINICHTHYS Newberry.

Xenodus Miller, 718; orthotype GONIODUS HERTZERI Newberry.

1651. OGILBY (1892). *On Some Undescribed Reptiles and Fishes from Australia.* Rec. Austral. Mus. II, 1892, 23–26.

JAMES DOUGLAS OGILBY.

Hyperlophus Ogilby, 24; orthotype CLUPEA SPRATELLOIDES Ogilby.

1652. PERUGIA (1892). *Descripzione di due nuove specie di pesci raccolti in Sarawak dai Sign. G. Doria ed O. Beccari.* Ann. Mus. Genov. (2), X, 1892, 1009–1010.

ALBERTO PERUGIA.

Eucirrichthys Perugia, 1009; orthotype E. DORIÆ Perugia.

1653. PERUGIA (1892). *Intorno ad alcuni pesci raccolti al Congo dal Capitano Giacomo Bove.* Ann. Mus. Genova (2), X, 1892, 967–977.

ALBERTO PERUGIA.

Peltura Perugia, 972; orthotype P. BOVEI Perugia. Name regarded as preoccupied by PELTOURA Milne-Edwards, 1840, replaced by PHRACTURA Boulenger.

1654. POHLIG (1892). *Altpermische Saurierhäkiten, Fische und Medusen der Gegend von Friedrichroda.* 1 Thür. Leuckart Festschrift, 1892, 59–64.

HANS POHLIG.

Lepidopterus Pohlig, 63; orthotype L. CRASSUS Pohlig (fossil).

1655. REIS (1892). *Zur Osteologie und Systematik der Belonorhynchiden und Tetragonolepiden.* Geogn. JB, IV, 1892, 143–166.

OTTO M. REIS

Saurorhynchus Reis, 145; orthotype BELONOSTOMUS ACTUS Ag. (fossil).

1656. TRAQUAIR (1892). *Notes on the Devonian Fishes of Campbelltown and Scaumenac Bay in Canada.* No. 2. Geol. Mag. (3) X.

RAMSAY HEATLEY TRAQUAIR.

Doliodus Traquair, 145; orthotype DIPLODUS PROBLEMATICUS Woodw. (fossil). Not DOLIODON Grd.

1657. VAILLANT (1892). *Sur le genre Megapleuron.* Comptes Rendus Acad. Sci. Paris, CXIV.

LÉON VAILLANT.

Megapleuron Vaillant, 1083; orthotype CERATODUS ROCHEI Gaudry (fossil).

1658. WALCOTT (1892). *Preliminary Notes on the Discovery of a Vertebrate Fauna in Silurian (Ordovician) Strata.* Bull. Geol. Soc. Amer. III, 153–172.

CHARLES DOOLITTLE WALCOTT (1850–).

Dictyorhabdus Walcott, 165; orthotype D. PRISCUS Walcott; called, without description, PALÆCHIMÆRA in 1891.

Astraspis Walcott, 166; orthotype A. DESIDERATA Walcott (fossil). An OSTRACOPHORE, supposed to be allied to THYESTES or, according to Eastman, to PSAMMOSTEUS; the earliest recorded vertebrate fossil, from Trenton rocks, Canyon City, Colo.

Eriptychius Walcott, 167; orthotype E. AMERICANUS Walcott.

1659. WOODWARD (1892). *Further Contributions to Knowledge of the Devonian Fish-Fauna of Canada.* Geol. Mag. (3) IX, 1892, 481–485.

ARTHUR WILLIAM WOODWARD.

Protodus Woodward, 1; orthotype P. JEXI (Traquair) Woodw. (fossil).

1660. WOODWARD (1892). *On Some Teeth of New Chimæroid Fishes from the Oxford and Kimmeridge Clays of England.* Ann. Mag. Nat. Hist. (6) X, 1892, 13–16.

ARTHUR SMITH WOODWARD.

Pachymylus Woodward, 14; orthotype P. LEEDSI Woodw. (fossil).
Brachymylus Woodward, 14; orthotype B. ALTIDENS Woodw. (fossil).

1893.

1661. ALCOCK (1893). *Natural History Notes from H. M. Indian Marine Survey Steamer "Investigator," Commander C. F. Oldham, R. N., Commanding.* Series II, No. 9, *An Account of the Deep Sea Collection Made During the Season of 1892–93.* Journ. Asiat. Soc. Bengal, LXII, 1893, 177–184.

ALFRED WILLIAM ALCOCK.

Bathypercis Alcock, 178; orthotype B. PLATYRHYNCHUS Alcock.

1662. BEAN (1893). *Description of a New Blennioid Fish from California.* Proc. U. S. Nat. Mus. XVI.

TARLETON HOFFMAN BEAN.

Plagiogrammus Bean, 699; orthotype P. HOPKINSI Bean.

1663. CLAYPOLE (1893). *The Cladodont Sharks of the Cleveland Shale.* Amer. Geol. XI, 325–331.

EDMUND WALLER CLAYPOLE.

Monocladodus Claypole, 329; orthotype M. CLARKI Claypole (fossil).

1664. COPE (1893). *On Symmorium, and the Position of the Cladodont Sharks.* Amer. Naturalist, X, VII, 1893, 999–1001.

EDWARD DRINKER COPE.

Symmorium Cope, 999; orthotype S. RENIFORME Cope (fossil).

1665. COPE (1893). *A New Extinct Species of Cyprinidæ.* P. Ac. Phila., 1893, 19–20.

EDWARD DRINKER COPE.

Aphelichthys Cope, 19; orthotype A. LINDAHLII Cope (fossil).

1666. EIGENMANN & BEESON (1893). *Preliminary Note on the Relationship of the Species Usually United Under the Generic Name Sebastodes.* Amer. Natural. XXVII, 1893, 668–671.

CARL H. EIGENMANN; CHARLES H. BEESON.

Primospina Eigenmann & Beeson, 669; orthotype SEBASTODES MYSTINUS J. & G.
Acutomentum Eigenmann & Beeson, 669; orthotype SEBASTODES OVALIS Ayres.
Pteropodus Eigenmann & Beeson, 670; orthotype SEBASTODES MALIGER J. & G.
Auctospina Eigenmann & Beeson, 670; orthotype SEBASTES AURICULATUS Grd.

1667. FRITSCH (1893). *Fauna der Gaskohle und der Kalkstein der Permformation Böhmens.* III. Heft. 2. 1893, 49–80.

ANTON JAN FRITSCH.

Traquairia Fritsch, 50; orthotype ACANTHODES PYGMÆUS Fritsch (fossil).
Protacanthus Fritsch, 55; orthotype P. PINNATUS Fritsch (fossil)
Trissolepis Fritsch, 76; orthotype SPHÆROLEPIS KOUNOVIENSIS Fritsch (fossil).

1668. FRITSCH (1893). *(Electrolepis, etc.)* Archiv. Naturw. Landeselwrchf. Böhmen, IX.

ANTON JAN FRITSCH.

Dipnolepis Fritsch, 66; orthotype D. JAHNI Fritsch (fossil). Dermal scutes similar to those of ENCHODUS.

Electrolepis Fritsch, 72; orthotype E. HORRIDA Fritsch (fossil). Berycoid scales.

Spinacites Fritsch, 72; orthotype S. RADIATUS Fritsch (fossil). Berycoid fin spine.

1669. GILBERT (1893). *Report on the Fishes of the Death Valley Expedition, Collected in Southern California and Nevada in 1891, with Descriptions of New Species.* North Amer. Fauna, VII, 1893, 229–234.

CHARLES HENRY GILBERT.

Empetrichthys Gilbert, 233; orthotype E. MERRIAMI Gilbert.

1670. GILL (1893). *A Comparison of Antipodal Faunas.* Mem. Ac. Washington, VI, 1893, 91–124.

THEODORE GILL.

Promethichthys Gill, 123; orthotype GEMPYLUS PROMETHEUS Cuv. & Val. Substitute for PROMETHEUS Lowe, preoccupied.

Pagrosomus Gill, 97, 123; orthotype CHRYSOPHRYS UNICOLOR Q. & G. = SPARUS AURATUS Forster. Called SPAROSOMUS, on pages 116 and 123. by a slip in proof-reading.

Sparosomus Gill, 123; orthotype CHRYSOPHRYS UNICOLOR Q. & G. = SPARUS AURATUS Forster. Lapsus for PAGROSOMUS Gill, not SPARISOMA Sw.

Capromimus Gill, 123; orthotype PLATYSTETHUS ABBREVIATUS Hector.

Rhombocyttus Gill, 123; orthotype CYTTUS TRAVERSI Hutton.

Bathystethus Gill, 123; orthotype SCIÆNA CULTRATA Forster. Substitute for PLATYSTETHUS Gthr., preoccupied.

Evistius Gill, 123; orthotype PLATYSTETHUS HUTTONI Gthr.

Ericentrus Gill, 123; orthotype CLINUS RUBRUS Hutton.

Notoclinus Gill, 124; orthotype BLENNIUS FENESTRATUS Forster.

Cologrammus Gill, 124; orthotype CLINUS FLAVESCENS Hutton.

Caulopsetta Gill, 124; orthotype PLEURONECTES SCAPHUS Forster.

1671. GILL (1893). *(Erilepis.)* Science XXII.

THEODORE GILL.

Erilepis Gill, 52; orthotype MYRIOLEPIS ZONIFER Lockington. A substitute for MYRIOLEPIS Lockington, preoccupied in fossil fishes (MYRIOLEPIS Egerton).

1672. GÜNTHER (1893). *Second Report on the Reptiles, Batrachians, and Fishes Transmitted by Mr. H. H. Johnston from British Central Africa.* Proc. Zool. Soc. London, 1893, 616–628.

ALBERT GÜNTHER.

Engraulicypris Günther, 626; orthotype E. PINGUIS Gthr.

1673. HÆCKEL (1893). *Zur Phylogenie der Australischen Fauna, in Richard Semon's Forschungsreisen in Australien und dem Malayischen Archipel.* Jena.

ERNST (HEINRICH PHILIPP AUGUST) HÆCKEL (1834–1918).

Paramphioxus Hæckel; orthotype EPIGONICHTHYS CULTELLUS Peters. A synonym of EPIGONICHTHYS Peters.

1674. HOLMBERG (1893). *Dos peces Argentinos.* Revista del Jardin Zoologique de Buenos Aires, I.

EDUARDO LADISLAO HOLMBERG.

Aristommata Holmberg, 96, 354; orthotype A. INEXPECTATE Holmberg. Said to be a synonym of HYPOPTOPOMA Gthr.

1675. JORDAN & FESLER (1893). *A Review of the Sparoid Fishes of America and Europe.* Rep. U. S. Fish Comm. for 1889–91, 421–554 (1893).

DAVID STARR JORDAN; BERT FESLER (1868–).

Raizero Jordan & Fesler, 438; orthotype MESOPRION ARATUS Gthr.
Rabirubia Jordan & Fesler, 438; orthotype MESOPRION INERMIS Peters.
Isaciella Jordan & Fesler, 500; orthotype PRISTIPOMA BREVIPINNE Steind.
Isacia Jordan & Fesler, 501; orthotype PRISTIPOMA CONCEPTIONE Cuv. & Val.
Medialuna Jordan & Fesler, 536; orthotype SCORPIS CALIFORNIENSIS Steind.
Sectator Jordan & Fesler, 536; orthotype PIMELEPTERUS OCYURUS Jordan.

1676. MICHAEL (1893). *Ueber eine Neue Lepidosteiden-Gattung aus dem oberen Keuper Oberschlesiens.* Zeits. Deutsch. Ges., XLIV, 710–729.

RICHARD MICHAEL (1869–).

Prolepidotus Michael, 71; orthotype P. GALLINEKI Michael (fossil). A synonym of LEPIDOTES Ag.

1677. PERUGIA (1893). *Di alcuni pesci raccolti in Sumatra dal Dott. Elio Modigliani.* Ann. Mus. Stor. Nat. Geneva, XIII.

ALBERT PERUGIA.

Modigliania Perugia, 246; orthotype M. PAPILLOSA Perugia.

1678. PFEFFER (1893). *Ostafrikanische Fische gesammelt von Herrn Dr. F. Stuhlmann in Jahre 1888 und 1889.* Jahrb. Hamburg Anst., X, 1893, 131–177.

GEORG JOHANN PFEFFER (1854–).

Salarigobius Pfeffer, 141; orthotype S. STUHLMANNI Pfeffer.

1679. ROHON (1893). *Die Obersilurischen Fische von Oesel. II. Theil. Selachii, Dipnoi, Ganoidei, Pteraspidæ, and Cephalaspidæ.* Mem. Ac. St. Petersb., XLI, 1893, No. 5, 1–124.

JOSEF VICTOR ROHON.

Ancistrodus Rohon, 51; orthotype A. GRACILIS Rohon (fossil). Name regarded as preoccupied by ANCISTRODON, AGKISTRODON, etc.; replaced by GRYPODON Hay (1899).
Rhabdiodus Rohon, 53; orthotype R. PARVIDENS Rohon (fossil).
Tylodus Rohon, 57; logotype T. DELTOIDES Rohon (fossil).
Chelomodus Rohon, 60; orthotype C. DIGITIFERUS Rohon.
Palæosteus Rohon, 63; orthotype P. SCHMIDTI Rohon (fossil).
Gyropeltus Rohon, 67; orthotype G. LAHUSENI Rohon (fossil).

1680. SAUVAGE (1893). *Recherches sur les poissons du terrain permien d' Autun. Études des gîtes minéraux de la France, 1893.*

HENRI ÉMILE SAUVAGE.

Prosauropsis Sauvage, 4; orthotype PACHYCORMUS ELONGATUS Sauvage (fossil).

1681. SCHMIDT (1893). *Ueber neue silurische Fischfunde auf Oesel.* Jahrb. Mineral., 1893, I, 99–101.

FRIEDRICH SCHMIDT (1832–1908).

Tolypaspis Schmidt, 100; orthotype TOLYPELEPIS UNDULATUS Pander; substitute for TOLYPELEPIS Pander, preoccupied.

1682. SMITT (1893). *A History of Scandinavian Fishes* (by B. Fries, C. U. Ekström, and C. Sundevall). Edited by

FREDRIK ADAM SMITT (1839–1904).

Molua Smitt, 526; orthotype GADUS MOLVA L. A variant of MOLVA Fleming, reverting to the original spelling of Rondelet.

1683. TRAQUAIR (1893). *Notes on the Devonian Fishes of Campbelltown and Scaumenac Bay in Canada,* No. 3. Geol. Mag. (3). X, 1893, 262–267.

RAMSAY HEATLEY TRAQUAIR.

Scaumenacia Traquair, 262; orthotype PHANEROPLEURON CURTUM Whiteaves (fossil).

1684. VAILLANT (1893). *Sur une collection de poissons recueillie par M. Chaper à Borneo.* Bull. Soc. Zool. France, XVIII, 1893, 55–62.

LÉON VAILLANT.

Oxybarbus Vaillant, 57; orthotype BARBUS HETERONEMA Blkr.

1685. VAILLANT (1893). *Sur un poisson provenant du voyage de M. Bonvalotet du Prince Henri d'Orleans.* Bull. Soc. Philom. Paris (8), 1893, V, 197–204.

LÉON VAILLANT.

Anopleutropius Vaillant, 198; orthotype A. HENRICI Vaillant.

1686. VAILLANT (1893). *Sur un nouveau genre de poissons voisin de Fierasfer.* Comptes Rendus Acad. Paris, CXVII.

LÉON VAILLANT.

Rhizoiketicus Vaillant, 745; orthotype R. CAROLINENSIS Vaillant, from the Caroline Islands.

1687. WOODWARD (1893). *Palæichthyological Notes.* Ann. Mag. Nat. Hist. (6), XI, 1893, 281–287.

ARTHUR SMITH WOODWARD.

Ganolepis Woodward, 286; orthotype G. GRACILIS Woodw. (fossil).

1894.

1688. ALCOCK (1894). *Natural History Notes from H. M. Indian Marine Survey Steamer "Investigator." Series II, no. 11. An Account of a Recent Collection of Bathybial Fishes from the Bay of Bengal and from the Laccadive Sea.* Journ. Asiat. Soc. Bengal, LXIII, 1894, 115–137.

ALFRED WILLIAM ALCOCK.

Chascanopsetta Alcock, 128; orthotype C. LUGUBRIS Alcock.

1689. BEAN, B. A. (1894). *Description of Two New Flounders, Gastropsetta frontalis, and Cyclopsetta chittendeni. ("Albatross" Collections.)* Proc. U. S. Nat. Mus., XVII.

BARTON APPLER BEAN (1860–).

Gastropsetta Bean, 633; orthotype G. FRONTALIS Bean.
Cyclopsetta Bean, 634; orthotype C. CHITTENDENI Bean.

1690. BOULENGER (1894). *Descriptions of New Fresh Water Fishes from Borneo.* Ann. Mag. Nat. Hist. (6), XIII, 1894, 245–251.

GEORGE ALBERT BOULENGER.

Nematabramis Boulenger, 249; orthotype N. EVERETTI Boulenger.

1691. COPE (1894). *On the Fishes Obtained by the Naturalist Expedition in Rio Grande do Sul.* Proc. Amer. Phil. Soc., XXXIII, 1894, 84–108.

EDWARD DRINKER COPE.

Osteogaster Cope, 102; orthotype CORYDORAS EQUES Steind.

1692. COPE (1894). *On Three New Genera of Characinidæ.* Amer. Naturalist, XLVIII, 1894, 67.

EDWARD DRINKER COPE.

Diapoma Cope, 67; orthotype D. SPECULIFERUM Cope.
Chorimycterus Cope, 67; orthotype C. TENUIS Cope.
Asiphonichthys Cope, 67; orthotype A. STENOPTERUS Cope.

1693. COPE (1894). *New and Little Known Palæozoic and Mesozoic Fishes.* Journ. Ac. Nat. Sci. Phila., IX.

EDWARD DRINKER COPE.

Macrepistius Cope, 441; orthotype M. ARENATUS Cope (fossil).

1694. CLAYPOLE (1894). *On a New Placoderm, Brontichthys clarki, from the Cleveland Shale.* Amer. Geol., XIV, 1894, 379–80.

EDWARD WALLER CLAYPOLE (1835–1901).

Brontichthys Claypole, 379; orthotype B. CLARKI Claypole (fossil).

1695. EIGENMANN (1894). *Notes on Some South American Fishes.* Ann. N. York Ac., VII, 1894, 625–627.

CARL H. EIGENMANN.

Cryptops Eigenmann, 626; orthotype STERNOPYGUS HUMBOLDTI Steind. Name preoccupied; replaced by EIGENMANNIA J. & E., 1896.

1696. EIGENMANN & BRAY (1894). *A Revision of the American Cichlidæ.* Ann. N. York Acad., VII, 1894, 607–624.

CARL H. EIGENMANN; WILLIAM L. BRAY.

Retroculus Eigenmann & Bray, 614; orthotype R. BOULENGERI Eigenmann & Bray.
Æquidens Eigenmann & Bray, 616; orthotype HEROS TETRAMERUS Heckel.

1697. FRITSCH (1894). *Fauna der Gäskohle und der Kalksteine der Permformation Böhmens, III, e, Palæoniscidæ, I.* Prag., 1894, 81–104.

ANTON JAN FRITSCH.

Pyritocephalus Fritsch, 86; orthotype PALÆONISCUS SCULPTUS Fritsch (fossil).
Sceleptophorus Fritsch, 88; orthotype S. BISERIALIS Fritsch (fossil).

1697A. GILL (1894). *An Australasian Subfamily of Fresh-Water Atherinoid Fishes.* Am. Nat. XXVIII, 708–709.

THEODORE GILL.

Rhombatractus Gill, 709; orthotype ARISTEUS FRITZROYENSIS Castelnau. Substitute for ARISTEUS Castelnau, preoccupied; a synonym of MELANOTÆNIA Gill.

1698. GOODE & BEAN (1894). *On Harriotta, a New Type of Chimæroid Fish from the Deeper Waters of the Northwestern Atlantic.* Proc. U. S. Nat. Mus., 1894, XVII, 471–473.

GEORGE BROWN GOODE; TARLETON HOFFMAN BEAN.

Harriotta Goode & Bean, 471; orthotype H. RALEIGHANA G. & B.

1699. GOODE & BEAN (1894). *A Revision of the Order Heteromi, Deep-Sea Fishes, with a Description of the New Generic Types Macdonaldia and Lipogenys.* Proc. U. S. Nat. Mus.. XVII, 1894, 455–470.

GEORGE BROWN GOODE; TARLETON HOFFMAN BEAN.

Cetomimus Goode & Bean, 453; orthotype C. GILLII G. & B.

Rondeletia Goode & Bean, 454; orthotype R. BICOLOR G. & B.

Gigliolia Goode & Bean, 465; orthotype G. MOSELEYI G. & B.

Macdonaldia Goode & Bean, 467; orthotype NOTACANTHUS ROSTRATUS Collett.

Lipogenys Goode & Bean, 469; orthotype L. GILLII G. & B.

1700. HILGENDORF (1894). *Neue Characinidengattung, Petersius, aus dem Kingani-Flusse in Deutsch-Ostafrika.* Sitzber. Ges. Naturf. Berlin, 1894, 172–173.

FRANZ MARTIN HILGENDORF.

Petersius Hilgendorf, 172; orthotype P. CONSERIALIS Hilgendorf.

1701. JAEKEL (1894). *Die eocänen Selachier vom Monte Bolca. Ein Beitrag sur Morphogenie der Wirbeltiere.* Berlin, 1894.

OTTO (MAX JOHANNES) JAEKEL.

Hemiptychodus Jaekel, 137; orthotype PTYCHODUS MORTONI Mantell.

Promyliobatis Jaekel, 152; orthotype MYLIOBATIS GAZOLÆ Zigno (fossil).

Pseudogaleus Jaekel, 170; orthotype P. VOLTAI Jaekel (fossil).

1702. LANDOIS (1894). *Die Familie Megistopodus, Riesenbauchflosser.* N. Jahrb. Min., 1894, II, 228–235.

HERMANN LANDOIS (1835–).

Megistopus Landois, 228; orthotype MEGAPUS GUESTFALICUS Schlüter (fossil). Substitute for MEGAPUS Schlüter, 1868, preoccupied; a synonym of CHIROTHRIX Pictet & Humbert.

1702A. OGILBY (1894). *Description of Five New Species from the Australasian Region.* Proc. Linn. Soc. N. S. W., IX, June 27, 1894.

JAMES DOUGLAS OGILBY.

Scleropteryx (De Vis) Ogilby, 372; orthotype S. BICOLOR De Vis (MS.), OPHIOCLINUS DEVISI Ogilby. Name only, noted in synonomy by Ogilby; perhaps a synonym of OPHIOCLINUS.

1703. PERUGIA (1894). *Viaggio di Lamberto Loria nella Papuasia orientale. Pesci d'aqua dolce.* Ann. Mus. Genova (2), XIV, 1894, 546–553.

ALBERTO PERUGIA.

Lambertia Perugia, 550; orthotype L. ATRA Perugia.

1704. SAUVAGE (1894). *(Poissons fossiles.)* Bull. Sci. Yonne, XLVIII.

HENRI ÉMILE SAUVAGE.

Protosauropsis Sauvage, 4; orthotype PACHYCORMUS ELONGATUS Sauvage (fossil). Written PROSAUROPSIS by Woodward.

1705. STEINDACHNER (1894). *Die Fische Liberias.* Notes Leyden Mus., XVI, 1894, 1–96.

FRANZ STEINDACHNER.

Pelmatochromis Steindachner, 40; orthotype PARATILAPIA BUTTIKOFERI Steind.

Neolebias Steindachner, 78; orthotype N. UNIFASCIATUS Steind.

1706. STORMS (1894). *Troisième note sur les poissons du terrain Rupélien.* Mém. Soc. Belge. Geol., VIII, 1894, 67–82.

RAYMOND STORMS.

Amylodon Storms, 71; orthotype A. DELHEIDI Storms (fossil).

1707. TRAQUAIR (1894). *Notes on Paleozoic Fishes.* Ann. Mag. Nat. Hist. (6), XIV, 1894, 368–374.

RAMSAY HEATLEY TRAQUAIR.

Euphyacanthus Traquair, 371; orthotype E. SEMISTRIATUS Traquair (fossil).

1708. VAILLANT (1894). *Sur une collection de poissons recuellie en Basse-Californie et dans le Golf par M. Léon Diguet.* Bull. Soc. Philom. (8), VI, 1894, 69–75.

LÉON VAILLANT.

Neomugil Vaillant, 73; orthotype N. DIGUETI Vaillant.

Atopoclinus Vaillant, 73; orthotype A. RINGENS Vaillant.

1895.

1709. BERG (1895). *Enumeracion sistematica y sinonimica de los Peces de las Costas Argentina y Uruguaya.* An. Mus. Buenos Aires, IV, 1–120.

CARLOS BERG.

Parona Berg, 39; orthotype PAROPSIS SIGNATA Jenyns. Substitute for PAROPSIS Jenyns, 1842, preoccupied.

Sagenichthys Berg, 52; orthotype LONCHURUS ANCYLODON Bl. & Schn. Substitute for ANCYLODON Cuv., preoccupied, but MACRODON Schinz, 1817, is a still earlier substitute name.

Polyclemus Berg, 54; orthotype POLYCIRRHUS DUMERILI Bocourt. Substitute for POLYCIRRHUS Bocourt, preoccupied.

Phricus Berg, 65; orthotype APHRITIS URVILLI Cuv. Substitute for APHRITIS Cuv., preoccupied in DIPTERA (Latreille, 1804).

Thalassothia Berg, 67; orthotype THALASSOPHYNE MONTEVIDENSIS Berg.

1710. BOULENGER (1895). *Viaggio del dottor Alfredo Borelli nella Republica Argentina e nel Paraguay.* XII. Poissons. Boll. Mus. Torino, X, 1895, no. 196.

GEORGE ALBERT BOULENGER.

Nanognathus Boulenger, 3; orthotype N. BORELLII Boulenger.

1711. BOULENGER (1895). *Catalogue of the Fishes in the British Museum. Second Edition, Catalogue of the Perciform Fishes.* Vol. I, 1895.

GEORGE ALBERT BOULENGER.

Pseudalphestes Boulenger, 139; orthotype PLECTROPOMA PICTUM Tschudi.

Pomodon Boulenger, 144; orthotype PLECTROPOMA MACROPHTHALMUM Tschudi. An unwarranted substitute for the tasteless and inappropriate name HEUILUTJANUS Blkr.

Dinoperca Boulenger, 153; orthotype HAPALOGENYS PETERSII Day.

Chelidoperca Boulenger, 304; orthotype CENTROPRISTIS HIRUNDINACEUS Cuv. & Val.

1712. GARMAN (1895). *The Cyprinodonts.* Mem. Mus. Harvard, XIX, no. 1, 1–179.

SAMUEL GARMAN.

Glaridodon Garman, 40; orthotype G. LATIDENS Garman. Name preoccupied; later replaced by GLARIDICHTHYS Garman.

Cnestrodon Garman, 43; orthotype PŒCILIA DECEMMACULATUS Jenyns.

Pterolebias Garman, 141; orthotype P. LONGIPINNIS Garman.

1713. GILBERT (1895). *The Ichthyological Collections of the Steamer "Albatross" During the Years 1890 and 1891.* Rept. U. S. Fish Comm. for 1893, IX (1895).

CHARLES HENRY GILBERT.

Gyrinichthys Gilbert, 444; orthotype G. MINYTREMUS Gilbert.

Rhinoliparis Gilbert, 445; orthotype R. BARBULIFER Gilbert.

Lyconectes Gilbert, 446; orthotype L. ALEUTICUS Gilbert.

Bathyphasma Gilbert, 448; orthotype B. OVIGERUM Gilbert.

Derepodichthys Gilbert, 456; orthotype D. ALEPIDOTUS Gilbert.

Lyconema Gilbert, 471; orthotype L. BARBATUM Gilbert.

1714. GILL (1895). *The Differential Characters of Characinoid and Erythrinoid Fishes.* Proc. U. S. Nat. Mus., 1895, XVIII, 205–209.

THEODORE GILL.

Hoplerythrinus Gill, 208; orthotype ERYTHRINUS UNITÆNIATUS Spix.

1715. GILL (1895). *Note on the Fishes of the Genus Characinus.* Proc. U. S. Nat. Mus., XVIII.

THEODORE GILL.

Myloplus Gill, 214; orthotype (by implication) MYLETES ASTERIAS M. & T. Substitute for MYLETES M. & T., not of Cuvier, whose original haplotype was SALMO NILOTICUS L., not MYLETES RHOMBOIDALIS Cuv., as erroneously stated in Part I, p. 93, of *Genera of Fishes.*

1716. GILL (1895). *The Genera of Branchiostomidæ.* Amer. Naturalist, XXIX, 457–459.

THEODORE GILL.

Amphioxides Gill, 457; orthotype BRANCHIOSTOMA PELAGICUM Gthr.

1717. GILL (1895). *The Genus Leptophidium.* Amer. Nat., XXIX, 1895, 167–168.

THEODORE GILL.

Lepophidium Gill, 167; orthotype LEPTOPHIDIUM PROFUNDORUM Gill. Substitute for LEPTOPHIDIUM Gill, preoccupied in Snakes.

1718. GOODE & BEAN (1895). *Oceanic Ichthyology. A Treatise on the Deep-Sea and Pelagic Fishes of the World, Based Chiefly upon the Collections made by the Steamers "Blake," "Albatross," and "Fish Hawk" in the Northwestern Atlantic.* Special Bull. U. S. Nat. Mus., 553 pp., 1895.

GEORGE BROWN GOODE; TARLETON HOFFMAN BEAN.

Conocara Goode & Bean, 39; orthotype C. MACDONALDI G. & B.

Talismania Goode & Bean, 43; logotype BATHYTROCTES HOMOPTERUS Vaillant.

Bathylaco Goode & Bean, 57; orthotype B. NIGRICANS G. & B.

Benthosema Goode & Bean, 75; orthotype SCOPELUS MUELLERI Gmelin.

Collettia Goode & Bean, 83; orthotype MYCTOPHUM RAFINESQUEI Cocco.

Lampadena Goode & Bean, 85; orthotype L. SPECULIGERA G. & B.

Æthoprora Goode & Bean, 86; orthotype SCOPELUS METOPOCLAMPUS Cocco.

Bonapartia Goode and Bean, 102; orthotype B. PEDALIOTA G. & B. Name preoccupied; later replaced by ZAPHOTIAS G. & B.

Yarrella Goode & Bean, 103; orthotype Y. BLACKFORDI G. & B.

Grammatostomias Goode & Bean, 110; orthotype G. DENTATUS G. & B.

Aldrovandia Goode & Bean, 132; orthotype HALOSAURUS ROSTRATUS Gthr.

Hypoclydonia Goode & Bean, 236; orthotype H. BELLA G. & B.

Helicolenus Goode & Bean, 248; orthotype SCORPÆNA DACTYLOPTERA De la Roche.

Hilgendorfia Goode & Bean, 280; orthotype PARALIPARIS MEMBRANACEUS Gthr.

Dicromita Goode & Bean, 319; orthotype D. AGASSIZII G. & B.

Benthocometes Goode & Bean, 327; orthotype NEOBYTHITES ROBUSTUS G. & B.

Celema Goode & Bean, 329; logotype POROGADUS NUDUS Vaillant.

Alcockia Goode & Bean, 329; orthotype POROGADUS ROSTRATUS Gthr.

Mœbia Goode & Bean, 331; orthotype BATHYNECTES GRACILIS Gthr.

Penopus Goode & Bean, 335; orthotype P. MACDONALDI G. & B.

Hypsirhynchus "Facciolà, 111, pl. 11" (quoted in Goode & Bean, Oceanic Ichth., 379, 1895); orthotype H. HEPATICUS Facciolà.

Moseleya Goode & Bean, 417; orthotype MACRURUS LONGIFILIS Gthr. Name preoccupied; later replaced by DOLLOA Jordan.

Abyssicola Goode & Bean, 417; orthotype MACRURUS MACROCHIR Gthr.

Caulophryne Goode & Bean, 496; orthotype C. JORDANI G. & B.

Valenciennellus (Jordan & Evermann) in Goode & Bean, 513; orthotype MAUROLICUS TRIPUNCTULATUS Esmark. (Afterwards in Jordan & Evermann Fish, N. M. A. I., 1896, 577.)

Vinciguerria (Jordan & Evermann), in Goode & Bean, 513; orthotype MAUROLICUS ATTENUATUS Cocco. Advance notice, detailed account in Jordan & Evermann Fish, N. M. A. I., 1896, 577.

Manducus Goode & Bean, 514; orthotype GONOSTOMA MADERENSE Johnson.

Escolar (Jordan & Evermann) in Goode & Bean, August 23, 1896, 518; orthotype THYRSITOPS VIOLACEUS Bean. Later (1896) called BIPINNULA by Jordan & Evermann, October 3, 1896, through a slip in proof-reading.

Lophiodes Goode & Bean, 537; orthotype LOPHIUS MUTILUS Alcock.

1719. JORDAN (1895). *Description of Evermannia, a New Genus of Gobioid Fishes.* Proc. Calif. Acad. Sci. (2), IV, 592.

DAVID STARR JORDAN.

Evermannia Jordan, 592; orthotype GOBIOSOMA ZOSTERURUM J. & G.

1720. JORDAN (1895). *The Fishes of Sinaloa.* Proc. Calif. Acad. Sci. (2), V, 377–514.

DAVID STARR JORDAN (Assisted by EDWIN CHAPIN STARKS, GEORGE BLISS CULVER (1873–) & THOMAS MARION WILLIAMS (1871–).

Anchovia Jordan & Evermann, 411; orthotype ENGRAULIS MACROLEPIDOTUS K. & S. (Described fully in Fish, N. M. Amer., Jordan & Evermann, 1896, 449).

Thyrina Jordan & Culver, 419; orthotype T. EVERMANNI Jordan & Culver.

Xystæma Jordan & Evermann, 471; orthotype MUGIL CINEREUS Walbaum. A synonym of GERRES, as at first used by Quoy & Gaimard; not GERRES of most writers.

Ulæma Jordan & Evermann, 471; orthotype DIAPTERUS LEFROYI Goode.

Aboma Jordan & Starks, 497; orthotype A. ETHEOSTOMA Jordan & Starks.

Enneanectes Jordan & Gilbert, 501; orthotype TRIPTERYGIUM CARMINALE J. & G.

Alexurus Jordan, 511; orthotype A. ARMIGER Jordan.

1721. JORDAN & STARKS (1895). *The Fishes of Puget Sound.* Proc. Calif. Acad. Sci. (2), V, 1895, 785–852.

DAVID STARR JORDAN; EDWIN CHAPIN STARKS.

Zalarges Jordan & Williams, 793; orthotype Z. NIMBARIUS Jordan & Williams. Said to be a synonym of VINCIGUERRIA Jordan.

Ruscarius Jordan & Starks, 805; orthotype R. MEANYI Jordan & Starks.

Astrolytes Jordan & Starks, 807; orthotype ARTEDIUS FENESTRALIS J. & G.

Gilbertina Jordan & Starks, 811; orthotype G. SIGALUTES Jordan & Starks. Name preoccupied; later replaced by GILBERTIDIA Berg.

Pallasina (Cramer) Jordan & Starks, 815; orthotype SIPHAGONUS BARBATUS Steind.

Stelgis (Cramer) Jordan & Starks, 821; orthotype AGONUS VULSUS J. & G.

Averruncus Jordan & Starks, 824; orthotype A. EMMELANE Jordan & Starks.

Xystes Jordan & Starks, 824; orthotype X. AXINOPHRYS Jordan & Starks.

Lethotremus (Gilbert) Jordan & Starks, 827; orthotype L. VINOLENTUS Jordan & Starks.

Ronquilus Jordan & Starks, 838; orthotype BATHYMASTER JORDANI Gilbert.

Quietula Jordan & Evermann, 839; orthotype GILLICHTHYS Y-CAUDA Jenkins & Evermann.

Bryostemma Jordan & Starks, 841; orthotype BLENNIUS POLYACTOCEPHALUS Pallas.

Xererpes Jordan & Gilbert, 846; orthotype APODICHTHYS FUCORUM J. & G.

Xiphistes Jordan & Starks, 847; orthotype XIPHISTER CHIRUS J. & G. Name preoccupied in HEMIPTERA; the genus itself, however, is of doubtful value.

1722. KIRKALDY (1895). *A Revision of the Genera and Species of the Branchiostomidæ.* Quart. Journ. Mur. Sci., XXXVII.

J. W. KIRKALDY.

Heteropleuron Kirkaldy, 314; orthotype BRANCHIOSTOMA BASSANUM Gthr.

1723. KOENEN (1895). *Ueber einige Fischreste des norddeutschen und Böhmischen Devons.* Abh. Ges. Götting., XL, no. 2, 1–37.

ADOLF VON KOENEN.

Platyaspis Koenen, 21; orthotype P. TENUIS Koenen (fossil).

Holopetalichthys Koenen, 25; orthotype H. NOVAKI Koenen (fossil).

1724. KRAMBERGER (1895). *De Piscibus fossilibus Comeni, Mrzleci, Lesinæ et M. Libanonis, et appendix de Piscibus oligocænicis ad Tüffer, Sagor et Trifail.* Agram, 1895.

DRAGUTIN GORJANOVIC KRAMBERGER.

Opsigonus Kramberger, 9; orthotype O. SQUAMOSUS Kramberger (fossil).

Ancylostylos Kramberger, 42; orthotype A. GIBBUS Kramberger (fossil).

Lobopterus Kramberger, 44; orthotype L. PECTINATUS Kramberger (fossil).

Acanthophoria Kramberger, 45; orthotype PAGELLUS LIBIANICUS Pictet (fossil). A synonym of ACROGASTER Ag.

1725. OGILBY (1895). *On Two New Genera and Species of Fishes from Australia.* Proc. Linn. Soc. New South Wales (2), X, 320–324.

JAMES DOUGLAS OGILBY.

Centropercis Ogilby, 320; orthotype C. NUDIVITTATUS Ogilby.

Tropidostethus Ogilby, 323; orthotype T. RHOTHOPHILUS Ogilby. Name preoccupied; replaced by Iso Jordan & Starks.

1726. STARKS (1895). *Description of a New Genus and Species of Cottoid from Puget Sound.* Proc. Acad. Nat. Sci. Phila, 1895, 410–412.

EDWIN CHAPIN STARKS.

Jordania Starks, 410; orthotype J. ZONOPE Starks.

1727. STRÖMMAN (1895). *Leptocephalids in the University Zoological Museum at Upsala.* S. B. Bohmisch. Ges., 1895, No. XXXIII, 42 pp.

H. STRÖMMAN.

Euleptocephalus Strömman, 51; logotype LEPTOCEPHALUS SICANUS Facciolà.

1728. VINCIGUERRA (1895). *Esplorazione del Giuba a dei suoi affluenti compiuta dal Cap. V. Bottego durante gli anni 1892–93 sotto gli auspicii della Società geographia Italiana.* Pesci Ann. Mus. Genova (2), XV, 1895, 21–60.

DECIO VINCIGUERRA.

Neobola Vinciguerra, 56; orthotype N. BOTTEGOI Vinciguerra.

1729. WEBER (1895). *Fische von Ambon, Java, Thursday Island, dem Burnett-Fluss und von der Südküste von New Guinea.* Semon's Zoolog. Forschungsreisen, V, 259–276.

MAX (CARL WILHELM) WEBER (1852–).

Stiphodon Weber, 269; orthotype S. SEMONI Weber.

1730. WOODWARD (1895). *The Fossil Fishes of the Tabragar Beds (Jurassic ?).* Mem. Geol. Surv. New S. Wales, Pal., No. 9, 1–27.

ARTHUR SMITH WOODWARD.

Aphnelepis Woodward, 9; orthotype A. AUSTRALIS Woodw. (fossil).
Ætheolepis Woodward, 12; orthotype A. MIRABILIS Woodw. (fossil).
Archæomæne Woodward, 15; orthotype A. TENUIS Woodw. (fossil).

1731. WOODWARD (1895). *Catalogue of Fossil Fishes in the British Museum, etc., III.*

ARTHUR SMITH WOODWARD.

Asthenocormus Woodward, 380; orthotype EUGNATHUS TITANIUS Wagner (fossil). Substitute for AGASSIZIA Vetter, preoccupied.
Microconodus (Traquair) Woodward, 437; orthotype M. MOLYNEUXI Traquair (fossil). In synonymy: a synonym of GONATODUS Traquair.
Ctenolepis (Agassiz) Woodward, 530; orthotype C. CYCLUS Ag. (fossil). Name only in Agassiz, Poiss. Foss., II, 1844, 180.

1732. WOOLMAN (1895). *Report on a Collection of Fishes from the Rivers of Central and Northern Mexico.* Bull. U. S. Fish Comm. for 1894 (1895).

ALBERT JEFFERSON WOOLMAN (1868–1918).

Evarra Woolman, 64; orthotype E. EIGENMANNI Woolman.

1896.

1733. ALCOCK (1896). *Natural History Notes from H. M. Indian Marine Survey Steamer "Investigator." Series II, no. 23. A Supplementary List of the Marine Fishes of India, with Descriptions of Two New Genera and Eight New Species.* Journ. Asiat. Soc. Bengal, LXV, 301–338.

ALFRED WILLIAM ALCOCK.

Boopsetta Alcock, 305; orthotype B. UMBRARUM Alcock.
Scopelarchus Alcock, 307; orthotype S. GUENTHERI Alcock.

1734. ALESSANDRI (1896). *Ricerche sui pesci fossili di Paranà (Repubblica Argentina).* Atti. Acc. Sci. Torino, XXXI.

GULIO DE ALESSANDRI.

Protautoga Alessandri, 729; orthotype P. LONGIDENS Alessandri (fossil).

1735. BEAN & BEAN (1896). *Notes on Fishes Collected in Kamtschatka and Japan by Leonhard Stejneger and Nikolai A. Grebnitzki, with a Description of a New Blenny.* (Dec. 30, 1896.)

TARLETON HOFFMAN BEAN; BARTON APPLER BEAN.

Phoilidapus Bean & Bean, 389; orthotype P. GREBNITZKII Bean & Bean.

1736. BOULENGER (1896). *Descriptions of New Fishes from the Upper Shiré River, British Central Africa, Collected by Dr. Percy Rendall, and Presented to the British Museum by Sir Harry H. Johnston.* Proc. Zool. Soc. London, 1896, 915–920.

GEORGE ALBERT BOULENGER.

Docimodus Boulenger, 917; orthotype D. JOHNSTONI Boulenger.

Corematodes Boulenger, 919; orthotype C. SHIRANUS Boulenger.

1737. COLLETT (1896). *Poissons provenant des campagnes du Yacht l'Hirondelle. Résultats des campagnes scientifiques accomplies sur son Yacht par Albert I, Prince Souverain de Monaco.* Fascicule X, Monaco, 1896, 198 pp.

ROBERT COLLETT.

Halosauropsis Collett, 143; orthotype HALOSAURUS MACROCHIR Gthr.

1738. GARMAN (1896). *Cross Fertilization and Sexual Rights and Lefts Among Vertebrates.* Amer. Naturalist, XXX, 232.

SAMUEL GARMAN.

Glaridichthys Garman, 232; orthotype GIRARDINUS UNINOTATUS Poey. Substitute for GLARIDODON Garman, preoccupied.

1739. GILL (1896). *The Differential Characters of the Syngnathid and Hippocampid Fishes.* Proc. U. S. Nat. Mus., XVI. (April 23, 1896.)

THEODORE GILL.

Phycodurus Gill, 159; orthotype PHYLLOPTERYX EQUES Gthr.

1740. GILL (1896). *Lipophrys a substitute for Pholis.* Amer. Naturalist, XXX, 498.

THEODORE GILL.

Lipophrys Gill, 498; orthotype BLENNIS PHOLIS L. Substitute for PHOLIS Cuv. & Val., preoccupied by PHOLIS (Gronow) Scopoli.

1741. GRASSI & CALANDRUCCIO (1896). *Sullo svilluppo dei murenoidi.* Atti. Acc. Lincei Roma, V.

GIOVANNI BATTISTA GRASSI; SALVATORE CALANDRUCCIO.

Todarus Grassi & Calandruccio, 349; orthotype NETTASTOMA BREVIROSTRE Facciolà.

1742. GÜNTHER (1896). *Report on the Collection of Reptiles and Fishes Made by Messrs. Potanin & Berezowski in the Chinese Provinces Kansu and Sze-Chuen.* Ann. Ac. St. Petersb., 1896, 199–219.

ALBERT GÜNTHER.

Onychostoma Günther, 211; orthotype O. LATICEPS Gthr.

Leucogobio Günther, 212; orthotype L. HERZENSTEINI Gthr. A synonym of GNATHOPOGON Blkr.

1743. HERZENSTEIN (1896). *Ueber einige neue und seltene Fische des Zoologischen Museums der Kaiserlichen Akademie der Wissenschaften.* Ann. Ac. St. Petersb., 1896, 1–14.

SALOMON MARKOVICH HERZENSTEIN.

Coreoperca Herzenstein, 11; orthotype C. HERZI Herzenstein.
Nemalycodes Herzenstein, 14; orthotype N. GRIGORJEWI Herzenstein.

1744. JORDAN (1896). *Notes on Fishes Little Known or New to Science. (Contributions to Biology from the Hopkins Seaside Laboratory.)* Proc. Cal. Ac. Sci., VI, 1896 (June 19).

DAVID STARR JORDAN.

Zaprora Jordan, 202; orthotype Z. SILENUS Jordan.
Emmydrichthys Jordan & Rutter, 221; orthotype E. VULCANUS Jordan & Rutter, based on an example with a deformed dorsal fin, the last two spines bitten off and the wound healed, the coloration jet black, otherwise agreeing fairly with SYNANCEICHTHYS VERRUCOSUS (Bl. & Schn.). A synonym of SPURCO (Commerson) Cuv. & Val. or SYNANCEICHTHYS Blkr.
Tarandichthys Jordan & Evermann, 225; orthotype ICELINUS FILAMENTOSUS Gilbert.
Ulca Jordan & Evermann, 227; orthotype HEMITRIPTERUS MARMORATUS Gilbert.
Bryssetæres Jordan & Evermann, 230; orthotype GOBIESOX PINNIGER Gilbert.
Arbaciosa Jordan & Evermann, 230; orthotype GOBIESOX HUMERALIS Gilbert.
Rimicola Jordan & Evermann, 231; orthotype GOBIESOX MUSCARUM Meek & Pierson.*
Starksia Jordan & Evermann, 231; orthotype LABRISOMUS CREMNOBATES Gilbert.
Exerpes Jordan & Evermann, 232; orthotype AUCHENOPTERUS ASPER Jenkins & Evermann.

1745. JORDAN & EVERMANN (1896). *A Check List of the Fishes and Fish-like Vertebrates of Northern and Middle America.* Rept. U. S. Fish Comm. for 1895 (1896) (issued December, 1896). This Catalogue was issued in 1896, soon after the publication of Part 1 of the Fishes of North and Middle America by the same authors, and in advance of parts 2 and 3 (1898) and part 4 (1900). Most of the genera described in detail in the later parts are first characterized in this Check List, from which several names later defined should date. In this and other papers by these authors several names are first presented as appellations for subgenera, a matter of no importance so far as their use in nomenclature is concerned.)

DAVID STARR JORDAN; BARTON WARREN EVERMANN.

Rhonciscus Jordan & Evermann, 387; orthotype PRISTIPOMA CROCRO Cuv. & Val.
Rhencus Jordan & Evermann, 387; orthotype PRISTIPOMA PANAMENSE Steind.
Exonautes Jordan & Evermann, 332; orthotype EXOCŒTUS EXSILIENS Müller.
Eslopsarum Jordan & Evermann, 330; orthotype CHIROSTOMA JORDANI Woolman. A section under CHIROSTOMA Sw.
Evapristis Jordan & Evermann, 388; orthotype ORTHOPRISTIS LETHOPRISTIS Jordan & Fesler.
Otrynter Jordan & Evermann, 388; orthotype STENOTOMUS CAPRINUS Bean.
Salema Jordan & Evermann, 390; orthotype PERCA UNIMACULATA Bloch. (Not SALEIMA Bowdich, a Portuguese variant of the Spanish name.)
Buccone Jordan & Evermann, 394; orthotype CYNOSCION PRÆDATORIUS J. & G.
Elattarchus Jordan & Evermann, 397; orthotype ODONTOSCION ARCHIDIUM J. & G.
Zonoscion Jordan & Evermann, 401; orthotype POLYCIRRHUS RATHBUNI Jordan & Bollman.

---

* Charles John Pierson.

Zaclemus (Gilbert) Jordan & Evermann, 401; orthotype Paralonchurus goodei Gilbert.

Zalembius Jordan & Evermann, 403; orthotype Cymatogaster rosaceus J. & G.

Iridio Jordan & Evermann, 412; orthotype Labrus radiatus L. (1758).

Emmeekia Jordan & Evermann, 413; orthotype Pseudojulis venustus Jenkins & Evermann.

Julidio Jordan & Evermann, 413; orthotype Pseudojulis adustus Gilbert.

Euscarus Jordan & Evermann, 416; orthotype Labrus cretensis L.

Loro Jordan & Evermann, 418; orthotype Scarus guacamaia Cuv.

Zenion Jordan & Evermann, 418; orthotype Cyttus hololepis G. & B.

Angelichthys Jordan & Evermann, 420; orthotype Chætodon ciliaris L.

Xesurus Jordan & Evermann, 421; orthotype Prionurus punctatus Gill.

1746. JORDAN & EVERMANN (1896). *The Fishes of North and Middle America; a Descriptive Catalogue of the Species of Fish-like Vertebrates Found in the Waters of North America, North of the Isthmus of Panama.* Part. I, Bull. U. S. Nat. Mus., No. XLVII, 1896, 1340 pp. (March 18, 1896.)

David Starr Jordan; Barton Warren Evermann.

Haustor Jordan & Evermann, 137; orthotype Gadus lacustris Walbaum = Pimelodus nigricans Le Sueur.

Rabidus Jordan & Evermann, 146; orthotype Noturus furiosus Jordan & Meek.

Iotichthys Jordan & Evermann, 243; orthotype Leuciscus phlegethontis Cope.

Opsopœa Jordan & Evermann, 249; orthotype Opsopœodus bollmani Gilbert..

Azteca Jordan & Evermann, 258; orthotype Notropis aztecus Woolman. Name preoccupied; later replaced by Aztecula Jordan & Evermann.

Orcella Jordan & Evermann, 289; orthotype Notropis orca Woolman.

Yuriria Jordan & Evermann, 321; orthotype Hybopsis altus Jordan.

Eigenmannia Jordan & Evermann, 341; orthotype Sternopygus humboldti Steind. Substitute for Cryptops Eigenmann, preoccupied.

Verma Jordan & Evermann, 374; orthotype Sphagebranchus kendalli Gilbert.

Scutica Jordan & Evermann, 404; orthotype Gymnomuræna nectura J. & G. A synonym of Uropterygius Rüppell.

Tarpon Jordan & Evermann, 409; orthotype Megalops atlanticus Cuv. & Val.

Jenkinsia Jordan & Evermann, 418; orthotype Dussumieria stolifera J. & G.

Lile Jordan & Evermann, 431; orthotype Sardinella stolifera J. & G.

Anchovia Jordan & Evermann, 449; orthotype Engraulis macrolepidotus K. & S.

Mitchillina Jordan & Evermann, 453; orthotype Alepocephalus bairdii G. & B.

Spirinchus Jordan & Evermann, 522; orthotype Osmerus thaleichthys Ayres.

Nansenia Jordan & Evermann, 528; orthotype Microstomus grœnlandicus Reinh.

Kenoza Jordan & Evermann, 626; orthotype Esox americanus Gmelin.

Fontinus Jordan & Evermann, 645; orthotype Fundulus seminolis Grd.

Gambusinus Jordan & Evermann, 649; orthotype Fundulus rathbuni Jordan & Meek.

Cololabis (Gill) Jordan & Evermann, 726; orthotype Scombresox brevirostris Peters.

Lethostole Jordan & Evermann, 792; orthotype Chirostoma estor Jordan. A section under Chirostoma Sw.

Kirtlandia Jordan & Evermann, 794; orthotype Chirostoma vagrans G. & B. A synonym apparently of Membras Bonaparte.

Eurystole Jordan & Evermann, 802; orthotype Atherinella eriarcha J. & G.

Ostichthys (Langsdorff) Jordan & Evermann, 846; orthotype Myripristis japonicus C. & V.

Bipinnula Jordan & Evermann, 878; orthotype Thyrsitops violaceus Bean (Oct. 3, 1896). A synonym of Escolar J. & E. (Aug. 23, 1896), the two names both left standing through a slip in proof-reading.

Palometa Jordan & Evermann, 966; orthotype Rhombus palometa Jordan & Bollman.

Swainia Jordan & Evermann, 1040; orthotype Ethestoma squamatum Gilbert & Swain.

Torrentaria Jordan & Evermann, 1080; orthotype Etheostoma sagitta Jordan & Swain.

Rafinesquiellus Jordan & Evermann, 1082; orthotype Etheostoma pottsi Grd.

Nivicola Jordan, 1082; orthotype Etheostoma boreale Jordan.

Claricola Jordan & Evermann, 1093; orthotype Etheostoma juliæ Meek.

Psychromaster Jordan & Evermann, 1099; orthotype Etheostoma tuscumbia Gilbert & Swain.

Copelandellus Jordan & Evermann, 1100; orthotype Etheostoma quiescens Jordan.

Enneistus Jordan & Evermann, 1147; orthotype Bodianus acanthistius Gilbert.

Archoperca Jordan & Evermann, 1171; orthotype Mycteroperca boulengeri Jordan & Starks.

Xystroperca Jordan & Evermann, 1181; orthotype Mycteroperca pardalis Gilbert.

Ocyanthias Jordan & Evermann, 1227; orthotype Holanthias martinicensis Guich.

Osbeckia Jordan & Evermann, 424; orthotype Balistes scriptus Osbeck.

Chapinus Jordan & Evermann, 424; orthotype Ostracion bicaudalis L.

Rosicola Jordan & Evermann, 429; orthotype Sebastosomus pinniger Gill.

Eosebastes Jordan & Evermann, 430; orthotype Sebastichthys aurora Gilbert.

Hispanicus Jordan & Evermann, 431; orthotype Sebastichthys rubrivinctus J. & G.

Rastrinus Jordan & Evermann, 437; orthotype Icelus scutiger Bean.

Zesticelus Jordan & Evermann, 443; orthotype Acanthocottus profundorum Gilbert.

Stellerina (Cramer) Jordan & Evermann, 447; orthotype Brachyopsis xyosternus J. & G.

Sarritor (Cramer) Jordan & Evermann, 448; orthotype Odontopyxis frenatus Gill.

Lyoliparis Jordan & Evermann, 451; orthotype Liparis pulchellus Ayres.

Caremitra Jordan & Evermann, 451; orthotype Careproctus simus Gilbert.

Allochir Jordan & Evermann, 452; orthotype Careproctus melanurus Gilbert.

Allurus Jordan & Evermann, 452; orthotype Careproctus ectenes Gilbert. Name preoccupied; replaced in 1900 by Allinectes J. & E.

Amitrichthys Jordan & Evermann, 453; orthotype Paraliparis cephalus Gilbert.

Sicya Jordan & Evermann, 456; orthotype Sicydium gymnogaster Ogilby-Grant.

Lythrypnus Jordan & Evermann, 458; orthotype Gobius dalli Gilbert.

Zalypnus Jordan & Evermann, 459; orthotype Gobius emblematicus J. & G.

Ilypnus Jordan & Evermann, 460; orthotype Lepidogobius gilberti Eigenmann & Eigenmann.

Rathbunella Jordan & Evermann, 463; orthotype Bathymaster hypoplectus Gilbert.

Arctoscopus Jordan & Evermann, 464; orthotype Trichodon japonicus Steind.

Esloscopus Jordan & Evermann, 465; orthotype Dactyloscopus zelotes J. & E.

Mnierpes Jordan & Evermann, 468; orthotype Clinus macrocephalus Gthr.

Scartes Jordan & Evermann, 471; orthotype SALARIAS RUBROPUNCTATUS Cuv. & Val. Name preoccupied; replaced in 1898 by SCARTICHTHYS J. & E.

Rhodymenichthys Jordan & Evermann, 474; orthotype GUNNELLUS RUBERRIMUS Cuv. & Val. = BLENNIUS DOLICHOGASTER Pallas.

Ulvaria Jordan & Evermann, 475; orthotype PHOLIS SUBBIFURCATUS Storer.

Furcella Jordan & Evermann, 480; orthotype LYCODES DIAPTERUS Gilbert. Name preoccupied; replaced by FURCIMANUS J. & E. (1898).

Chilara Jordan & Evermann, 482; orthotype OPHIDIUM TAYLORI Grd.

Rissola Jordan & Evermann, 483; orthotype OPHIDIUM MARGINATUM De Kay.

Bellator Jordan & Evermann, 488; orthotype PRIONOTUS MILITARIS G. & B.

Vulsiculus Jordan & Evermann, 489; orthotype PERISTEDION IMBERBE Poey.

Remorina Jordan & Evermann, 490; orthotype ECHENEIS ALBESCENS T. & S.

Caulistius Jordan & Evermann, 491; orthotype GOBIESOX PAPILLIFER Gilbert.

Embassichthys Jordan & Evermann, 506; orthotype CYNICOGLOSSUS BATHYBIUS Gilbert.

Nexilarius (Gilbert) Jordan & Evermann, 512; orthotype EUSCHISTODUS CONCOLOR Gill. Misprinted NEXILARIS.

1747. OGILBY (1896). *On a New Genus and Species of Fishes from Maroubra Bay.* Proc. Linn. Soc. New S. Wales, XXI, 23–25.

JAMES DOUGLAS OGILBY.

Apogonops Ogilby, 23; orthotype A. ANOMALUS Ogilby. This genus also occurs in an article entitled *On a New Genus (Apogonops) and Species of Australian Fishes.* Zool. Anzeiger, XIX, 256, 1896.

1748. OGILBY (1896). *Descriptions of Two New Genera and Species of Australian Fishes.* Proc. Linn. Soc. New S. Wales, XXI, 136–142.

JAMES DOUGLAS OGILBY.

Macrurrhynchus Ogilby, 136; orthotype M. MAROUBRÆ Ogilby. A synonym of ASPIDONTUS Ehrenberg.

Dermatopsis Ogilby, 138; orthotype D. MACRODON Ogilby.

1749. OGILBY (1896). *Rough-Backed Herrings.* Proc. Linn. Soc. N. S. W., XXI, 504.

JAMES DOUGLAS OGILBY.

Potamalosa Ogilby, XXI, 504; orthotype CLUPEA NOVÆ-HOLLANDIÆ Cuv. & Val.

1750. OSTROUMOFF (1896). *Zwei neue Relicten-Gattungen im Amazonen Meere.* Zool. Anz., XIX, 30.

ALEKSEYEI ALEKSANDROVICH OSTROUMOFF (1858–).

Asperina Ostroumoff, 30; orthotype A. IMPROVISA Ostroumoff, a deep-sea form of UMBRINA CIRRHOSA (L.). A synonym of UMBRINA Cuv.

1751. PHILIPPI (1896). *Peces nuevos de Chile.* Ann. Univ. Santiago de Chile, LXLIII.

RUDOLPH AMANDUS PHILIPPI.

Acmonotus Philippi, 375; orthotype A. CHILENSIS Philippi. Probably a synonym of LEPTONOTUS Kaup.

1752. RUTTER (1896). *Notes on Fresh-Water Fishes of the Pacific Slope of North America. II. The Fishes of Rio Yaqui, Sonora, with the Description of a New Genus of Siluridæ.* Proc. Cal. Ac. Sci., VI. (June 23, 1896.)

CLOUDSLEY M. RUTTER (1875–1905, about).

Villarius Rutter, 258; orthotype V. PRICEI Rutter. This genus is supposed to differ from HAUSTOR J. & E. (March 18, 1896) (fork-tailed AMEIURUS) in the presence of small scattered villi on the sides of the body. It is claimed that such villi exist also in several other species of HAUSTOR, at least in the young. VILLARIUS is therefore perhaps, but not certainly, a synonym of HAUSTOR, the latter having three months' priority.

1753. STARKS (1896). *List of Fishes Collected at Port Ludlow, Washington* Proc. Calif. Acad. Sci. (2), VI, 549–562.

EDWIN CHAPIN STARKS.

Axyrias Starks, 554; orthotype A. HARRINGTONI Starks. A near ally of ARTEDIUS Grd., perhaps a synonym.

1754. SEALE (1896). *Note on Deltistes, a New Genus of Catostomoid Fishes* Proc. Cal. Ac. Sci., V., 1896.

ALVIN SEALE (1870–).

Deltistes Seale, 269; orthotype CHASMISTES LUXATUS Cope.

1755. STORMS (1896). *Première note sur les poissons wemméliens (Éocène supérieur de la Belgique).* Bull. Soc. Belg. Geol. Pal., X.

RAYMOND STORMS.

Ctenodentex Storms, 199; orthotype DENTEX LÆKENIENSIS Van Beneden (fossil).

1897.

1756. BOULENGER (1897). *An Account of the Fresh-Water Fishes Collected in Celebes by Drs. P. & F. Sarasin.* Proc. Zool. Soc. London, 1897, 426–429.

GEORGE ALBERT BOULENGER.

Telmatherina Boulenger, 428; orthotype T. CELEBENSIS Boulenger.

1757. BOULENGER (1897). *Description of a New Ceratopterine Eagle-Ray from Jamaica.* Ann. Nat. Hist. (6), XX, 227–228.

GEORGE ALBERT BOULENGER.

Ceratobatis Boulenger, 227; orthotype C. ROBERTSI Boulenger.

1758. EASTMAN (1897). *Tamiobatis Vetustus, a New Form of Fossil Skate.* Amer. J. Sci. (4), 85–90.

CHARLES ROCHESTER EASTMAN (1868–1918).

Tamiobatis Eastman, 85; orthotype T. VETUSTUS Eastman. (Fossil cranium from Devonic or carboniferous, Kentucky.)

1759. EASTMAN (1897). *On the Occurrence of Fossil Fishes in the Devonian of Iowa.* Iowa Geol. Surv., VII, Ann. Rep. for 1896, 108–116.

CHARLES ROCHESTER EASTMAN.

Synthetodus Eastman, 111; orthotype S. TRISULCATUS Eastman (fossil, dental elements, perhaps DIPNEUSTAN, Devonic, Iowa).

1760. EIGENMANN (1897). *Steindachneria.* Amer. Nat., 1897, XXXI, 158–159.

CARL H. EIGENMANN.

Steindachnerella Eigenmann, 159; orthotype STEINDACHNERIA ARGENTEA G. & B., 1888. Substitute for STEINDACHNERIA G. & B., a name regarded as preoccupied by STEINDACHNERIA Eigenmann, 1897, as no type had been mentioned with the earlier STEINDACHNERIA of Goode & Bean. STEINDACHNERIA of Goode & Bean apparently holds, and a new name, STEINDACHNERIDION Eigenmann, 1919, has been given to Eigenmann's genus.

1761. GILBERT & CRAMER (1897). *Report on the Fishes Dredged in Deep Water Near the Hawaiian Islands, with descriptions and figures of Twenty-three New Species.* Proc. U. S. Nat. Mus., 1896, XIX, 403–435. (Feb. 5, 1897.)

CHARLES HENRY GILBERT; FRANK CRAMER.

Argyripnus Gilbert & Cramer, 414; orthotype A. EPHIPPIATUS Gilbert & Cramer.

Cœlocephalus Gilbert & Cramer, 422; orthotype C. ACIPENSERINUS Gilbert & Cramer. Name preoccupied; replaced by MATÆOCEPHALUS Berg.

Pelecanichthys Gilbert & Cramer, 432; orthotype P. CRUMENALIS Gilbert & Cramer.

1762. GILL & TOWNSEND (1897). *Diagnosis of New Species of Fishes Found in Bering Sea. Proc. Soc. Washington,* XI, 231–234.

THEODORE GILL; CHARLES HASKINS TOWNSEND.

Ericara Gill & Townsend, 232; orthotype E. SALMONEA Gill & Townsend.

1763. GILBERT (1897). *Descriptions of Twenty-two New Species of Fishes Collected by the Steamer "Albatross," of the U. S. Fish Comm.* Proc. U. S. Nat. Mus., 1896, XIX, 437–457. (Feb. 5, 1897.)

CHARLES HENRY GILBERT.

Emmnion (Jordan) Gilbert, 454; orthotype E. BRISTOLÆ Jordan.

Ulvicola Gilbert & Starks, 455; orthotype U. SANCTÆ-ROSÆ Gilbert & Starks.

1764. NIKOLSKII (1897). *Les Reptiles, Amphibiens, et Poissons recueillis par Mr. N. Zaroudny dans la Perse orientale* (Russian text). Ann. Mus. St. Petersb., 1897, 306–348.

ALEKSANDR MIKHAILOVICH NIKOLSKII (1858–).

Apiostoma Nikolskii, 345; orthotype A. ZARUDNYI Nikolskii. A synonym of SCHIZOTHORAX Heckel.

Apiorhynchus Nikolskii, 345; orthotype APIOSTOMA ZARUDNYI Nikolskii. Apparently a synonym of APIOSTOMA Nikolskii.

1765. OGILBY (1897). *New Genera and Species of Australian Fishes.* Proc. Linn. Soc. New S. Wales, 1897, XXII, 62–95.

JAMES DOUGLAS OGILBY.

Omochætus Ogilby, 72; orthotype HYPERLOPHUS COPEI Ogilby = MELETTA VITTATA Castelnau. Perhaps a synonym of HYPERLOPHUS Ogilby.

Monothrix Ogilby, 87; orthotype M. POLYLEPIS Ogilby.

Austrophycis Ogilby, 91; orthotype A. MEGALOPS Ogilby.

1766. OGILBY (1897). *Some New Genera and Species of Fishes.* Proc. Linn. Soc. New S. Wales, XXII, 245–257.

JAMES DOUGLAS OGILBY.

Scolenchelys Ogilby, 246; orthotype MURÆNICHTHYS AUSTRALIS Macleay. A synonym of MURÆNICHTHYS Blkr.

Myropterura Ogilby, 247; orthotype M. LATICAUDATA Ogilby.

Goodella Ogilby, 249; orthotype G. HYPOZONA Ogilby. A synonym of TRACHINOCEPHALUS Gill.

1767. OGILBY (1897). *On Some Australian Eleotrinæ.* Proc. Linn. Soc. New S. Wales, XII, 725–757.

JAMES DOUGLAS OGILBY.

Carassiops Ogilby, 732; orthotype ELEOTRIS COMPRESSUS Krefft.

Krefftius Ogilby, 736; orthotype ELEOTRIS AUSTRALIS Krefft. A synonym of MOGURNDA Gill.

Mulgoa Ogilby, 740; orthotype ELEOTRIS COXII Krefft.

Ophiorrhinus Ogilby, 745; logotype ELEOTRIS GRANDICEPS Krefft. A synonym of PHILYPNODON Blkr.

1768. PERUGIA (1897). *Di alcuni Pesci raccolti nell' Alto Paraguay dal Cav. Guido Boggiani.* Ann. Mus. Genova (2), XVIII, 147–150.

ALBERTO PERUGIA.

Boggiania Perugia, 148; orthotype B. OCELLATA Perugia.

1769. PLATE (1897). *Ein neuer Cyclostom mit grossen, normal entwickelten Augen, Macrophthalmia chilensis, n. g. n. sp.* Sitzber. Ges. Naturf. Berlin, 1897, 137–141.

LUDWIG HERMANN PLATE (1862–).

Macrophthalmia Plate, 137; orthotype M. CHILENSIS Plate.

1770. PRIEM (1897). *Sur les dents d'élasmobranches de divers gisements sénoniens. (Villedieu, Meudon, et Foix-les-Caves.)* Bull. Soc. Geol. France, XXV, 40–56.

FERNAND PRIEM (–1919).

Pseudocorax Priem, 47; orthotype CORAX AFFINIS Ag.

1771. VAILLANT (1897). *Siluroide nouveau de l'Afrique orientale (Chimarrhoglanis leroyi).* Bull. Mus. Paris, 1897, 81–84.

LÉON VAILLANT.

Chimarrhoglanis Vaillant, 81; orthotype C. LEROYI Vaillant. A synonym of AMPHILIUS Gthr.

1898.

1772. ALCOCK (1898). *Natural History Notes from H. M. Indian Marine Survey Ship "Investigator," Commander T. H. Heming, R. N., commanding. Series II, No. 25. A Note on the Deep-Sea Fishes, Including Another Probably Viviparous Ophidioid.* Ann. Mag. Nat. Hist. (7), II, 136–156.

ALFRED WILLIAM ALCOCK.

Benthobatis Alcock, 144; orthotype B. MORESBYI Alcock.

1773. BASSANI (1898). *Aggiunti all' ittiofauna eocenica di Monte Bolca e Postate.* Palont. Italica, III.

FRANCESCO BASSANI.

Oncolepis Bassani, 79; orthotype O. ISSELI Bassani (fossil).

1774. BOULENGER (1898). *Description of a New Genus of Cyprinoid Fishes from Siam.* Ann. Mag. Nat. Hist (7), I, 450–451.

GEORGE ALBERT BOULENGER.

Catlocarpio Boulenger, 450; orthotype C. SIAMENSIS Boulenger.

1775. BOULENGER (1898). *Poissons nouveaux du Congo.* Ann. Mus. Congo, Zool. I, 1–20, 21–38.

GEORGE ALBERT BOULENGER.

Stomatorhinus Boulenger, 9; orthotype MORMYRUS WALKERI Gthr.

Myomyrus Boulenger, 10; orthotype M. MACRODON Boulenger.
Genyomyrus Boulenger, 17; orthotype G. DONNYI Boulenger.
Eugnathichthys Boulenger, 26; orthotype E. EETVELDII Boulenger.

1776. BOULENGER (1898). *On a Collection of Fishes from the Rio Jura, Brazil.* Trans. Zool. Soc. London, XIV, 421–428.

GEORGE ALBERT BOULENGER.

Steatogenys Boulenger, 428; orthotype RHAMPHICHTHYS ELEGANS Steind.

1777. BOULENGER (1898). *On a New Genus of Salmonoid Fishes from Altai Mountains.* Ann. Mag. Nat. Hist. (7), I, 329–331.

GEORGE ALBERT BOULENGER.

Phyllogephyra Boulenger, 330; orthotype P. ALTAICA Boulenger.

1778. BOULENGER (1898). *Descriptions of Two New Siluroid Fishes from Brazil.* Ann. Mag. Nat. Hist. (7), II, 477–478.

GEORGE ALBERT BOULENGER.

Leptodoras Boulenger, 477; orthotype OXYDORAS ACIPENSERINUS Gthr.

1779. BOULENGER (1898). *A Revision of the African and Syrian Fishes of the Family Cichlidæ, Part I.* Proc. Zool. Soc. London, 1898, 132–152.

GEORGE ALBERT BOULENGER.

Chromidotilapia Boulenger, 151; orthotype C. KINGSLEYÆ Boulenger.

1780. BOULENGER (1898). *Report on the Collection of Fishes Made by Mr. J. E. S. Moore in Lake Tanganyika . . . 1895–1896.* Trans. Zool. Soc., XV, 1–30.

GEORGE ALBERT BOULENGER.

Telmatochromis Boulenger, 10; orthotype T. VITTATUS Boulenger.
Julidochromis Boulenger, 11; orthotype J. ORNATUS Boulenger.
Bathybates Boulenger, 15; orthotype B. FEROX Boulenger.
Eretmodus Boulenger, 16; orthotype E. CYANOCINCTUS Boulenger.
Tropheus Boulenger, 17; orthotype T. MOORII Boulenger.
Simochromis Boulenger, 19; orthotype CHROMIS DIAGRAMMA Gthr.
Petrochromis Boulenger, 20; orthotype P. POLYODON Boulenger.
Perissodus Boulenger, 20; orthotype P. MICROLEPIS Boulenger.
Plecodus Boulenger, 22; orthotype P. PARADOXUS Boulenger.

1781. DEAN (1898). *New Species and a New Genus of American Palæozoic Fishes, . . . from a Nearly Completed MS. by John Strong Newberry.* Trans. N. Y. Acad. Sci., XV. Edited by Bashford Dean.

BASHFORD DEAN (1867–).

Stenognathus (Newberry) Dean, about 300; orthotype DINICHTHYS CORRUGATUS Terrell.

1782. EASTMAN (1898). *Dentition of Devonian Pyctodontidæ.* Amer. Naturalist, XXXII, 473–488; 545–560.

CHARLES ROCHESTER EASTMAN.

Phlyctænacanthus Eastman, 552; orthotype P. TELLERI Eastman (a fossil ICHTHYODORULITE from Devonic, Wisconsin). A synonym of ECZEMATOLEPIS Miller = ACANTHOLEPIS Newberry.

Belemnacanthus Eastman, 552; orthotype B. GIGANTEUS Eastman (fossil spine, perhaps of an OSTRACODERM, from the Devonic of Eifel).

1783. EVERMANN & KENDALL (1898). *Descriptions of New or Little Known Genera and Species of Fishes from the United States.* Bull. U. S. Fish Commission, XVII, 125–133.

BARTON WARREN EVERMANN; WILLIAM CONVERSE KENDALL.

Signalosa Evermann & Kendall, 127; orthotype S. ATCHAFALAYÆ Evermann & Kendall.

Lyosphæra Evermann & Kendall, 131; orthotype L. GLOBOSA Evermann & Kendall.

Ogilbia (Jordan & Evermann) Evermann & Kendall, 132; orthotype O. CAYORUM Evermann & Kendall.

1784. GOELDI (1898). *Primeira Contribução para o conhecimento dos peixes do valle dos Amazonas e dos Guyanas, etc.* Bol. Mus. Paraense. Hist. Nat., Para II.

EMIL AUGUST GOELDI.

Phrenatobius Goeldi, orthotype P. CISTERNARUM Goeldi. A little known subterranean fish.

1785. HAY (1898). *Notes on Species of Ichthyodectes, including the New Species I. cruentus, and on the Related and Herein Established Genus Gillicus.* Amer. J. Sci. (4), VI, 225–232.

OLIVER PERRY HAY.

Gillicus Hay, 230; orthotype PORTHEUS ARCUATUS Cope. Said to be a synonym of ICHTHYODECTES Cope.

1786. IHERING (1898). *Description of a New Fish from Saõ Paulo.* Proc. Acad. Nat. Sci. Phila,, 1898, 108–109.

HERMANN VON IHERING (1850–).

Paulicea Ihering, 109; orthotype P. JAHU Ihering.

1787. JAEKEL (1898). *Ueber Hybodus Agassiz.* Sitzber. Naturf. Berlin, 1898, 135–146.

OTTO (MAX JOHANNES) JAEKEL.

Orthybodus Jaekel, 138; orthotype HYBODUS GROSSICONUS Ag. (fossil).

Parhybodus Jaekel, 143; orthotype HYBODUS LONGICONUS Ag. (fossil).

1788. JAEKEL (1898). *Der verschiedenen Rochentypen.* Sitzber. Naturf. Berlin, 1898, 44–53.

OTTO (MAX JOHANNES) JAEKEL.

Lagarodus Jaekel. 50; orthotype PSAMMODUS SPECULARIS Romanowskii (fossil).

1789. JORDAN (1898). *Description of a Species of Fish (Mitsukurina owstoni) from Japan, the Type of a Distinct Family of Lamnoid Sharks.* Proc. Calif. Acad. Sci. (3), I, 199–201.

DAVID STARR JORDAN.

Mitsukurina Jordan, 199; orthotype M. OWSTONI Jordan, a living homologue of the extinct genus SCAPANORHYNCHUS Woodw.

1790. JORDAN & EVERMANN (1898). *The Fishes of North and Middle America; a Descriptive Catalogue of the Species of Fish-like Vertebrates found in the Waters of North America, North of the Isthmus of Panama.* Pt. II. Bull. U. S. Nat. Mus. No. 47, 1241–2182. (Oct. 3, 1898.)

DAVID STARR JORDAN; BARTON WARREN EVERMANN.

Nector Jordan & Evermann, 1433; orthotype BAIRDIELLA ARMATA Gill.

Zestis Jordan & Evermann, 1439; orthotype STELLIFER OSCITANS J. & G.

Zestidium Jordan & Evermann, 1442; orthotype STELLIFER ILLECEBROSUS Gilbert.

Stellicarens Jordan & Evermann, 1445; orthotype STELLIFER ZESTOCARUS Gilbert.

Sigmurus (Gilbert) Jordan & Evermann, 1447; orthotype CORVINA VERMICULARIS Gthr.

Azurina (Jordan & McGregor) Jordan & Evermann, 1544; orthotype A. HIRUNDO Jordan & McGregor.

Forcipiger (Jordan & McGregor) Jordan & Evermann, 1671; orthotype CHELMON LONGIROSTRIS Cuv. & Val.

Emmelas Jordan & Evermann, 1773; orthotype SEBASTODES GLAUCUS Hilgendorf.

Alcidea Jordan & Evermann, 1886; orthotype PARICELINUS THOBURNI Gilbert.

Archistes (Jordan & Gilbert) Jordan & Evermann, 1900; orthotype A. PLUMARIUS J. & G.

Steligistrum (Jordan & Gilbert) Jordan & Evermann, 1921; orthotype S. STEJNEGERI J. & G.

Oxycottus Jordan & Evermann, 2015; orthotype OLIGOCOTTUS ACUTICEPS Gilbert.

Nautiscus Jordan & Evermann, 2019; orthotype NAUTICHTHYS PRIBILOVIUS J. & G.

Occa Jordan & Evermann, 2043; orthotype BRACHYOPSIS VERRUCOSUS Lockington.

Gurnardus Jordan & Evermann, 2148; orthotype PRIONOTUS GYMNOSTETHUS Gilbert.

Merulinus Jordan & Evermann, 2148; orthotype TRIGLA CAROLINA L.

1791. JORDAN & EVERMANN (1898). *The Fishes of North and Middle America; a Descriptive Catalogue of the Species of Fish-like Vertebrates Found in the Waters of North America North of the Isthmus of Panama.* Part III. Bull. U. S. Nat. Mus., No. 47, pp. 2183–3136. (Nov., 1898.)

DAVID STARR JORDAN; BARTON WARREN EVERMANN.

Enypnias Jordan & Evermann, 2232; orthotype GOBIUS SEMINUDUS Gthr.

Dæctor Jordan & Evermann, 2325; orthotype THALASSOPHRYNE DOWI J. & G.

Bryssophilus Jordan & Evermann, 2329; orthotype GOBIESOX PAPILLIFER Gilbert.

Pterognathus (Girard) Jordan & Evermann, 2355; orthotype NEOCLINUS SATIRICUS Grd.

Corallicola Jordan & Evermann, 2369; orthotype AUCHENOPTERUS NIGRIPINNIS Steind.

Homesthes (Gilbert) Jordan & Evermann, 2394; orthotype H. CAULOPUS Gilbert.

Blenniolus Jordan & Evermann, 2386; orthotype BLENNIUS BREVIPINNIS Gthr.

Scartichthys Jordan & Evermann, 2395; orthotype SALARIAS RUBROPUNCTATUS Cuv. & Val. A substitute for SCARTES J. & E., 1896, preoccupied.

Enedrias Jordan & Evermann, 2414; orthotype GUNNELLUS NEBULOSUS T. & S.

Ernogrammus Jordan & Everman, 2441; orthotype STICHÆUS ENNEAGRAMMUS Kner.

Ozorthe Jordan & Evermann, 2441; orthotype STICHÆUS HEXAGRAMMUS T. & S.

Embryx Jordan & Evermann, 2456; orthotype LYCODOPSIS CRASSILABRIS Gilbert.

Lycias Jordan & Evermann, 2463; orthotype LYCODES NEBULOSUS Kner.

Theragra (Lucas) Jordan & Evermann, 2535; orthotype GADUS CHALCOGRAMMUS Pallas.

Emphycus Jordan & Evermann, 2552; orthotype PHYCIS TENUIS Mitchill. A substitute for PHYCIS Raf., which is preoccupied, but PHYCIS Röse (1793), its equivalent, is apparently valid.

Verasper (Jordan & Gilbert) Jordan & Evermann, 2618; orthotype V. MOSERI J. & G.

Ramularia Jordan & Evermann, 2663; orthotype ANCYLOPSETTA DENDRITICA Gilbert.

Perissias Jordan & Evermann, 2667 orthotype PLATOPHYRYS TÆNIOPTERUS Gilbert.

Albatrossia Jordan & Evermann, 2573; orthotype MACROURUS PECTORALIS Gilbert.

Bogoslovius Jordan & Evermann, 2574; orthotype B. CLARKI J. & G.

Aztecula Jordan & Evermann, 2799; orthotype NOTROPIS AZTECUS Woolman. A substitute for AZTECA J. & E., preoccupied.

Zaphotias (Goode & Bean) Jordan & Evermann, 2826; orthotype BONAPARTIA PEDALIOTA G. & B. Substitute for BONAPARTIA G. & B., preoccupied.

Rhynchias (Gill) Jordan & Evermann, 2841; orthotype AMMODYTES SEPTIPINNIS Pallas, a species still unrecognized.

Zalocys (Jordan & McGregor) Jordan & Evermann, 2848; orthotype Z. STILBE Jordan & McGregor.

Sigmistes (Rutter) Jordan & Evermann, 2863; orthotype S. CAULIAS Rutter.

Aspistor Jordan & Evermann, 2863; orthotype ARIUS LUNISCUTIS Cuv. & Val.

Crystallichthys (Jordan & Gilbert) Jordan & Evermann, 2864; orthotype C. MIRABILIS J. & G.

Allinectes Jordan & Evermann, 2866; orthotype CAREPROCTUS ECTENES Gilbert. Substitute for ALLURUS J. & E., preoccupied by ALLURUS Forster (1862), a genus of HYMENOPTERA; also by ALLURUS Eisen (1874), a genus of worms.

Prognurus (Jordan & Gilbert) Jordan & Evermann, 2866; orthotype P. CYPSELURUS J. & G.

Sicyosus Jordan & Evermann, 2867; orthotype SICYDIUM GYMNOGASTER Ogilvie-Grant. Substitute for SICYA Jordan & Evermann, preoccupied.

Alectrias Jordan & Evermann, 2869; orthotype BLENNIUS ALECTROLOPHUS Pallas.

Furcimanus Jordan & Evermann, 2869; orthotype LYCODES DIAPTERUS Gilbert. Substitute for FURCELLA J. & E., preoccupied.

Flammeo Jordan & Evermann, 2871; orthotype HOLOCENTRUM MARIANUM Cuv. & Val.

1792. JORDAN & McGREGOR (1898). *List of Fishes Collected at the Revillagigedo Archipelago and Neighboring Islands.* Rept. U. S. Fish Comm., for 1898, 273–284.

DAVID STARR JORDAN; RICHARD CRITTENDEN McGREGOR.

The contents of this paper were included in the appendix to Part III of the *Fishes of North and Middle America,* of the same date.

Zalocys Jordan & McGregor, 276; orthotype Z. STILBE Jordan & McGregor.

Forcipiger Jordan & McGregor, 279; orthotype CHELMO LONGIROSTRIS Cuv. & Val.

1793. JORDAN & GILBERT (1898). *The Fishes of Bering Sea. In Jordan, Fur Seals, and Fur-Seal Islands of the North Pacific Ocean.* Part III.

DAVID STARR JORDAN; CHARLES HENRY GILBERT.

The genera and species described in this paper were mostly included in Jordan & Evermann's *Fishes of North America,* Part III, of the same date.

Therobromus (Lucas) Jordan & Gilbert, 440; orthotype THEROBROMUS CALLORHINI Lucas.*

Archistes Jordan & Gilbert, 454; orthotype A. PLUMARIUS J. & G.

Stelgistrum Jordan & Gilbert, 456; orthotype S. STEJNEGERI J. & G.

Crystallichthys Jordan & Gilbert, 476; orthotype C. MIRABILIS J. & G.

Prognurus Jordan & Gilbert, 478; orthotype P. CYPSELURUS J. & G.

Albatrossia Jordan & Gilbert, 487; orthotype MACROURUS PECTORALIS Gilbert.

Verasper Jordan & Gilbert, 490; orthotype V. MOSERI J. & G.

---

* Frederick Augustus Lucas (1852–).

1794. NEWBERRY (1898). *New Species and New Genus of American Palæozoic Fishes, Together with Notes on the Genera Oracanthus, Dactylodus, Polyrhizodus, Sandalodus, Deltodus.* Trans. N. Y. Acad., XVI, 1898, 282–304.

JOHN STRONG NEWBERRY.

Stenognathus Newberry, 303; orthotype DINICHTHYS CORRUGATUS Terrell (fossil).

1795. OGILBY (1898). *A Contribution to the Zoology of New Caledonia.* Proc. Linn. Soc. New S. Wales, XXII, 762–770.

JAMES DOUGLAS OGILBY.

Trichopharynx Ogilby, 769; orthotype GOBIUS CRASSILABRIS Gthr. A synonym of CHONOPHORUS Poey (AWAOUS Steind.).

1796. OGILBY (1898). *New Genera and Species of Fishes.* Proc. Linn. Soc. New S. Wales, XXIII, 32–41, 280–299.

JAMES DOUGLAS OGILBY.

Cinetodus Ogilby, 32; orthotype ARIUS FROGGATI Ramsay.

Nedystoma Ogilby, 32; orthotype HEMIPIMELODUS DAYI Ramsay & Ogilby.

Pachyula Ogilby, 33; orthotype HEMIPIMELODUS CRASSILABRIS Ramsay. A synonym of HEMIPIMELODUS.

Thysanophrys Ogilby, 40; orthotype PLATYCEPHALUS CIRRONASUS Rich.

Tæniomembras Ogilby, 41; orthotype ATHERINA MICROSTOMA Gthr. Apparently a synonym of HEPSETIA Bon.

Endorrhis Ogilby, 283; orthotype COPIDOGLANIS LONGIFILIS Macleay. A synonym of PARAPLOTOSUS.

Congrellus Ogilby, 288; orthotype MURÆNA BALEARICA Delaroche. A synonym of ARIOSOMA Sw., as restricted ; first noted by Jordan & Evermann.

Bathycongrus Ogilby, 292; orthotype CONGROMURÆNA NASICA Alcock.

Eucentronotus Ogilby, 294; orthotype E. ZIETZI Ogilby. A synonym of PERONEDYS Steind.

Creedia Ogilby, 298; orthotype C. CLATHRISQUAMIS Ogilby.

1797. OGILBY (1898). *Additions to the Fauna of Lord Howe Island.* Proc. Linn. Soc. New S. Wales, 1898, XXIV, 730–745.

JAMES DOUGLAS OGILBY.

Howella Ogilby, 733; orthotype H. BRODIEI Ogilby.

Machærope Ogilby, 736; orthotype M. LATISPINIS Ogilby.

Diancistrus Ogilby, 743; orthotype D. LONGIFILIS Ogilby.

1798. OGILBY (1898). *On Some Australian Eleotrinæ.* Proc. Linn. Soc. New S. Wales, XXII, 783–893.

JAMES DOUGLAS OGILBY.

Caulichthys Ogilby, 784; orthotype ELEOTRIS GUENTHERI Blkr. A synonym of HYPSELEOTRIS Gill.

Austrogobio Ogilby, 788; orthotype CARASSIOPS GALII Ogilby.

1799. PRIEM (1898). *Sur la faune ichthyologique des Assises Montiennes du Bassin de Paris et en particulier sur Pseudolates heberti, Gervais.* Bull. Soc. Geol. France (3), XXVI, 399–412.

FERNAND PRIEM.

Pseudolates Priem, 408; orthotype LATES HERBERTI Gervais (fossil). Name preoccupied by Macleay, 1877; replaced by PROLATES Priem.

1800. SMITT (1898). *Poissons de l'Expédition scientifique à la Terre de Feu.* Bih. Svenska Ak., XXIII-IV, no. 5, 1–80.

FREDERIK ADAM SMITT (1839–1904).

Dissostichus Smitt, 3; orthotype D. ELEGINOIDES Smitt.

1801. STEINDACHNER (1898). *Die Fische der Sammlung Plate. Fauna Chilensis . . . nach der Sammlung von Dr. L. Plate.* Zool. Jahrb. Suppl., IV, 281–337.

FRANZ STEINDACHNER.

Platea Steindachner, 323; orthotype P. INSIGNIS Steind.

1802. STORMS (1898). *Première note sur les Poissons Wemméliens (Éocène Supérieur) de la Belgique.* Mém. Soc. Belge. Geol., X, 1898, 198–240.

RAYMOND STORMS.

Ctenodentex Storms, 199; orthotype DENTEX LÆKENIENSIS Van Beneden (fossil).

Eomyrus Storms, 225; orthotype E. DOLLOI Storms (fossil).

1803. TRAQUAIR (1898). *Notes on Paleozoic Fishes, No. 2.* Ann. Mag. Nat. Hist. (7), II, 67–70.

RAMSAY HEATLEY TRAQUAIR.

Farnellia Traquair, 69; orthotype F. TUBERCULATA Traquair (fossil).

1804. VINCIGUERRA (1898). *I pesci dell' ultima Spedizione del Cap. Bottego.* Ann. Mus. Genova (2), XIX, 240–261.

DECIO VINCIGUERRA.

Oxyglanis Vinciguerra, 250; orthotype O. SACCHII Vinciguerra.

1805. WOODWARD (1898). *Notes on Some Type Specimens of Cretaceous Fishes from Mount Lebanon in the Geneva Museum.* Ann. Mag. Nat. Hist., VII, series 2.

ARTHUR SMITH WOODWARD.

Thrissopteroides Woodward, 408; orthotype T. TENUICEPS Woodw. = CLUPEA ELONGATA Davis (fossil).

1899.

1806. ABBOTT (1899). *The Marine Fishes of Peru.* Proc. Acad. Nat. Sci. Phila., 1899, 324–364.

JAMES FRANCIS ABBOTT (1875–).

Piscíregia Abbott, 342; orthotype P. BEARDSLEEI Abbott. A synonym of BASILICHTHYS Grd.

1807. ALCOCK (1899). *New Species of Fish.* Proc. Asiat. Soc. Bengal, 1899, 781.

ALFRED WILLIAM ALCOCK.

Halimochirus Alcock, 78; orthotype H. CENTRISCOIDES Alcock.

1808. AMEGHINO (1899). *Sinopsis geologico-paleontologica. Supplemento (Adiciones y correcciones).* La Plata, 1899, 1–13.

FLORENTINO AMEGHINO (1854–1911).

Paraikichthys Ameghino, 10; orthotype P. ORNATISSIMUS Ameghino (fossil).

1809. BERG (1899). *Substitucion de nombres genericos.* II Comun. Mus. Buenos Aires, I, 37–80.

CARLOS BERG.

Gilbertidia Berg, 42; orthotype GILBERTINA SIGOLUTES Jordan & Starks. Substitute for GILBERTINA Jordan & Starks, preoccupied.

Matæocephalus Berg, 43; orthotype CŒLOCEPHALUS ACIPENSERINUS Gilbert & Cramer. Substitute for CŒLOCEPHALUS Gilbert & Cramer, preoccupied.

1810. BOULENGER (1899). *Matériaux pour la faune du Congo. Poissons nouveaux du Congo. Troisième Partie: Silures, Acanthopterygiens, Mastacembles, Plectognathes,* Ann. Mus. Congo, Zool. I, 39–58. *Quatrième Partie: Polyptères, Clupes, Mormyres, Characins,* 59–96. *Cinquieme Partie: Cyprins, Silures, Cyprinodontes, Acanthopterygiens,* 97–128.

GEORGE ALBERT BOULENGER.

Chrysobagrus Boulenger, 40; orthotype C. BREVIBARBIS Boulenger.
Gephyroglanis Boulenger, 42; logotype G. CONGICUS Boulenger.
Steatocranus Boulenger, 52; orthotype S. GIBBICEPS Boulenger.
Teleogramma Boulenger, 53; orthotype T. GRACILE Boulenger.
Odaxothrissa Boulenger, 64; orthotype O. LOSERA Boulenger.
Paraphago Boulenger, 76; orthotype P. ROSTRATUS Boulenger.
Neoborus Boulenger, 78; orthotype N. ORNATUS Boulenger.
Micralestes Boulenger, 86; orthotype M. HUMILIS Boulenger.
Pseudoplesiops Boulenger, 90; orthotype P. NUDICEPS Boulenger. (Name preoccupied: Bleeker, 1858); replaced by NANOCHROMIS Pellégrin.
Chelæthiops Boulenger, 101; orthotype C. ELONGATUS Boulenger.
Parailia Boulenger, 105; orthotype P. CONGICA Boulenger.
Xenochromis Boulenger, 125; orthotype X. HECQUI Boulenger.

1811. BOULENGER (1899). *Second Contribution to the Ichthyology of Lake Tanganyika. On the Fishes Obtained by the Congo Free State Expedition under Lieut. Lemaire in 1898.* Trans. Zool. Soc. London, XV, 87–96.

GEORGE ALBERT BOULENGER.

Trematocara Boulenger, 89; orthotype T. MARGINATUM Boulenger.
Grammatotria Boulenger, 90; orthotype G. LEMAIRII Boulenger.
Xenotilapia Boulenger, 92; orthotype X. SIMA Boulenger.

1812. BOULENGER (1899). *Description of a New Genus of Perciform Fishes from the Cape of Good Hope.* Ann. S. African Mus., I, 379–380.

GEORGE ALBERT BOULENGER.

Atyposoma Boulenger, 379; orthotype A. GUERNEYI Boulenger.

1813. BOULENGER (1899). *Description of a New Genus of Gobioid Fishes from the Andes of Ecuador.* Ann. Mag. Nat. Hist. (7), IV, 125–126.

GEORGE ALBERT BOULENGER.

Oreogobius Boulenger, 125; orthotype O. ROSENBERGI Boulenger.

1814. BOULENGER (1899). *Descriptions of Two New Homalopterine Fishes from Borneo.* Ann. Nat. Hist. (7), IV, p. 228–229.

GEORGE ALBERT BOULENGER.

Glaniopsis Boulenger, 228; orthotype G. HANITSCHI Boulenger.

1815. EIGENMANN (1899). *A case of Convergence.* Science IX.

CARL H. EIGENMANN.

Troglichthys Eigenmann, 282; orthotype TYPHLICHTHYS ROSÆ Eigenmann (a blind fish from a cave in Missouri).

1816. EVERMANN & MARSH (1899). *Descriptions of New Genera and Species of Fishes from Puerto Rico.* Rept. U. S. Fish Comm. for 1899.

BARTON WARREN EVERMANN; MILLARD CALEB MARSH.

Gillias Evermann & Marsh, 357; orthotype G. JORDANI Evermann & Marsh.
Auchenistius Evermann & Marsh, 359; orhotype A. STAHLI Evermann & Marsh.
Coralliozetus Evermann & Marsh, 362; orthotype C. CARDONÆ Evermann & Marsh.

1817. GARMAN (1899). *Reports on an Exploration off the West Coasts of Mexico, Central and South America, and off the Galapagos Islands, in Charge of Alexander Agassiz, by the U. S. Fish Commission Steamer "Albatross" during 1891, Lieut. Commander Z. L. Tanner, U. S. N., Commanding. The Fishes.* Mem. Mus. Harvard, XXIV, 1–431.

SAMUEL GARMAN.

Centristhmus Garman, 47; orthotype C. SIGNIFER Garman.
Ectreposebastes Garman, 53; orthotype E. IMUS Garman.
Dolopichthys Garman, 81; orthotype D. ALLECTOR Garman.
Halieutopsis Garman, 89; orthotype H. TUMIFRONS Garman.
Dibranchopsis Garman, 96; orthotype HALIEUTÆA SPONGIOSA Gilbert.
Dibranchichthys Garman, 99; orthotype D. NUDIVOMER Garman.
Bothrocaropsis Garman, 127; orthotype B. ALALONGA Garman.
Leucicorus Garman, 146; orthotype L. LUSCIOSUS Garman.
Holcomycteronus Garman, 163; orthotype H. DIGITATUS Garman.
Eretmichthys Garman, 164; orthotype E. PINNATUS Garman.
Pseudonus Garman, 169; orthotype P. ACUTUS Garman.
Sciadonus Garman, 171; orthotype S. PEDICELLARIS Garman.
Microlepidium Garman, 180; orthotype LEPIDION VERECUNDUM Gilbert.
Leptophycis Garman, 182; orthotype L. FILIFER Garman.
Lychnopoles Garman, 224; orthotype L. ARGENTEOLUS Garman.
Dactylostomias Garman, 279; orthotype D. FILIFER Garman.
Congrosoma Garman, 308; orthotype C. EVERMANNI Garman.
Atopichthys Garman, 327; logotype A. ESUNCULUS Garman. A catchall for unplaced larval eels not known to be young CONGERS.

1818–1819. HAY (1899). *On Some Changes in the Names, Generic and Specific, of Certain Fossil Fishes.* Amer. Naturalist, XXXIII, 783–792.

OLIVER PERRY HAY.

Stemmatias Hay, 784; logotype STEMMATODUS CHEIRIFORMIS St. John & Worthen (fossil). Substitute for STEMMATODUS St. John & Worthen, preoccupied by STEMMATODUS Heckel.
Hybocladodus Hay, 784; orthotype HELODUS COMPRESSUS St. John & Worthen (fossil).
Platyxystrodus Hay, 785; orthotype COCHLIODUS STRIATUS Ag. (fossil). Substitute for XYSTRODUS (Ag.) Morris & Roberts, preoccupied by XYSTRODUS Plieninger (1860).
Polypsephis Hay, 788; orthotype MICRODON ELEGANS Ag. Substitute for MICRODON Ag., preoccupied in DIPTERA Meigen, 1803; but PROSCINETES Gistel (1848) is a still earlier substitute name.
Redfieldius Hay, 789; orthotype CATOPTERUS GRACILIS Redfield. Substitute for CATOPTERUS Redfield, preoccupied by CATOPTERUS Ag.
Grypodon Hay, 790; orthotype ANCISTRODON TEXANUS Dames (fossil). Substitute for ANCISTRODON Rœmer, and AGKISTRODUS de Koninck, regarded as preoccupied by AGKISTRODON Beauvais (ANCISTRODON of authors).

1820. JORDAN & SNYDER (1899). *Notes on a Collection of Fishes from the Rivers of Mexico, with Descriptions of Twenty New Species.* Bull. U. S. Fish Comm. for 1899, 116–147.

DAVID STARR JORDAN; JOHN OTTERBEIN SNYDER (1867–).

Istlarius Jordan & Snyder, 118; orthotype I. BALSANUS Jordan & Snyder.

Xystrosus Jordan & Snyder, 123; orthotype X. POPOCHE Jordan & Snyder.
Falcula Jordan & Snyder, 124; orthotype F. CHAPALÆ Jordan & Snyder.
Xenendum Jordan & Snyder, 127; orthotype X. CALIENTE Jordan & Snyder.

1821. KARPINSKII (1899). *Ueber die Reste von Edestiden und die neue Gattung von Helicoprion.* Mem. Acad. Sci. St. Petersb., VIII (and in other papers).

ALEKSANDR PETROVICH KARPINSKII (1846–).

Helicoprion Karpinskii, 307; orthotype H. BESSENOWI Karpinskii (fossil).

1822. OGILBY (1899). *Contributions to Australian Ichthyology.* Proc. Linn. Soc. New S. Wales, 1899, XXIV, 154–186.

JAMES DOUGLAS OGILBY.

Euristhmus Ogilby, 154; logotype PLOTOSUS ELONGATUS Castelnau.
Ostophycephalus Ogilby, 155; orthotype O. DURICEPS Ogilby.
Austrocobitis Ogilby, 158; orthotype MESITES ATTENUATUS Jenyns. A substitute for MESITES Jenyns, preoccupied; a synonym of GALAXIAS Cuv.
Epinephelides Ogilby, 170; orthotype E. LEAI Ogilby.
Anagramma Ogilby, 175; orthotype CALLANTHIAS ALLPORTI Gthr. A synonym of CALLANTHIAS Gthr.

1823–1824. PRIEM (1899). *Sur des poissons fossiles éocènes d'Egypte et de Roumanie, et rectification rélative à Pseudolates heberti (Gervais).* Bull. Soc. Geol. France, 1899, 3 ser. XXVII, 241–252.

FERNAND PRIEM.

Scorpænoides Priem, 248; orthotype S. POPOVICII Priem. (fossil). (Not SCORPÆNODES Blkr.)
Prolates Priem, 252; orthotype LATES HEBERTI Gervais (fossil). A substitute for PSEUDOLATES Priem, preoccupied.

1825. SMITT (1899). *Preliminary Notes on the Arrangement of the Genus Gobius, with an Enumeration of Its European Species.* Ofv. Vet. Ak. Forh., 1899, 543–555.

FREDERIK ADAM SMITT (1839–1904).

Caffrogobius Smitt, 540; orthotype GOBIUS NUDICEPS Cuv. & Val.
Lebistes Smitt, 543; orthotype L. SCORPIOIDES Smitt. Not LEBISTES Filippi, 1862.
Mugilogobius Smitt, 543; for "Indian & Japanese Species," no type named, but in a personal letter in 1903 Dr. Smitt stated to me that his type species was the one named CTENOGOBIUS ABEI Jordan & Snyder. Accepting this version, MUGILOGOBIUS is substantially the same as VAIMOSA Jordan & Seale, which name it may replace.
Mapo Smitt, 543; orthotype GOBIUS SOPORATOR Cuv. & Val. A synonym of BATHYGOBIUS Blkr.
Proterorhinus Smitt, 544; orthotype GOBIUS MARMORATUS Pallas.
Eichwaldia Smitt, 545; orthotype GOBIUS CASPIUS Eichwald.

1826. STEWART (1899). *Leptichthys, a New Genus of Fishes from the Cretaceous of Kansas.* Amer. Geologist, XXIV.

ALBAN F. STEWART.

Leptichthys Stewart, 78; orthotype L. AGILIS Stewart (fossil).

1827. TRAQUAIR (1899). *Report on Fossil Fishes Collected by the Geological Survey of Scotland in the Silurian Rocks of the South of Scotland.* Trans. Roy. Soc. Edinburgh, XXXIX, 827–864.

RAMSAY HEATLEY TRAQUAIR.

Lanarkia Traquair, 832; logotype L. HORRIDA Traquair (fossil).
Ateleaspis Traquair, 834; orthotype A. TESSELLATA Traquair (fossil).
Birkenia Traquair, 837; orthotype B. ELEGANS Traquair (fossil).
Lasanius Traquair, 840; logotype L. PROBLEMATICUS Traquair (fossil).

1828. VARPACHOVSKII (1899). *Sur la faune ichthyologique de la fleuve Obi.* Ann. Mus. Acad. Imp. St. Petersb.

NICOLAI ARCADEVICH VARPACHOVSKII.

Oreoleuciscus Varpachovskii, 263; orthotype CHONDROSTOMA POTANINI Kessler.

1829. WAITE (1899). *Scientific Results of the Trawling Expedition of H. M. C. C. S. "Thetis." Fishes.* Mem. Austr. Mus., IV, 1-132.

EDGAR RAVENSWOOD WAITE (1866-).

Paratrachichthys Waite, 64; orthotype TRACHICHTHYS TRAILLI Hutton.
Pterygotrigla Waite, 108; orthotype TRIGLA POLYOMMATA Rich. Replaces HOPLONOTUS Guichenot, preoccupied, apparently same as OTOHIME Jordan & Starks of later date.

1830. WILLISTON (1899). *A New Genus of Fishes from the Niobara Cretaceous.* Kans. Univ. Quarterly, 1899, VIII, 113-115.

SAMUEL WENDALL WILLISTON (1852-1918).

Leptecodon Williston, 113; orthotype L. RECTUS Williston (fossil).

1831. WOODWARD (1899). *Additional Notes on Some Type Specimens of Cretaceous Fishes from Mount Lebanon in the Edinburgh Museum of Science and Art.* Ann. Mag. Nat. Hist. (7), IV, 317-321.

ARTHUR SMITH WOODWARD.

Nematonotus Woodward, 318; orthotype CLUPEA BOTTÆ Pictet & Humbert (fossil).

1832. WOODWARD (1899). *Note on Some Cretaceous Clupeoid Fishes with Pectinated Scales. (Ctenothrissa and Pseudoberyx.)* Ann. Mag. Nat. Hist. 1899, (7), III, 489-492.

ARTHUR SMITH WOODWARD.

Ctenothrissa Woodward, 490; orthotype BERYX VEXILLIFER Pictet (fossil).

1900.

1833. BOULENGER (1900). *On Some Little Known African Siluroid Fishes of the Subfamily Doradinæ.* Ann. Mag. Nat. Hist. (7), VI, 520-529.

GEORGE ALBERT BOULENGER.

Euchilichthys Boulenger, 523; logotype ATOPOCHILUS GUENTHERI Schilthuis.
Phractura Boulenger, 527; orthotype PELTURA BOVEI Perugia. Substitute for PELTURA Perugia, regarded as preoccupied by PELTOURA, 1840.
Andersonia Boulenger, 528; orthotype A. LEPTURA Boulenger.

1834. BOULENGER (1900). *Matériaux pour la faune du Congo. Poissons nouveaux du Congo. Sixième Partie.* Ann. Mus. Congo. Zool., I, 129-164.

GEORGE ALBERT BOULENGER.

Leptocypris Boulenger, 133; orthotype L. MODESTUS Boulenger.
Spathodus Boulenger, 152; orthotype S. ERYTHRODON Boulenger.

1835. BRAUER (1900). *Aus der Tiefen des Weltmeeres* (by Prof. Carl Chun). *Schilderung von der deutschen Tiefsee-Expedition.* Jena, 1900, 549 pp.

AUGUST BRAUER.

Megalopharynx Brauer, 521; orthotype M. LONGICAUDATUS Brauer.

1836. DELFIN (1900). *Nota del Ictiolojia. El nuevo jenero Cilus.* Act. Soc. Chili, X, 53-60.

FREDERICO TEOBALDO DELFIN.

Cilus Delfin, 56; orthotype C. MONTII Delfin.

1837. DOLLO (1900). *Cryodraco antarcticus, poisson abyssal nouveau, recueilli par l'expédition antractique belge,* etc. Bull. Ac. Belgique, 1900, 128-137.

LOUIS DOLLO (1857-).

Cryodraco Dollo, 129; orthotype C. ANTARCTICUS Dollo.

1838. DOLLO (1900). *Gerlachea australis, poisson abyssal nouveau recueilli par l'expédition antarctique belge,* etc. Bull. Ac. Belgique, 1900, 194-206.

LOUIS DOLLO.

Gerlachea Dollo, 195; orthotype G. AUSTRALIS Dollo.

1839. DOLLO (1900). *Racovitzia glacialis, poisson abyssal nouveau recueilli par l'expédition antarctique belge,* etc. Bull. Ac. Belgique, 1900, 316-327.

LOUIS DOLLO.

Racovitzia Dollo, 317; orthotype R. GLACIALIS Dollo.

1840. EIGENMANN & NORRIS (1900). *Sobre algunos peixes de S. Paulo, Brasil.* Revista Mus. Paulista, IV, 1900, 349-362.

CARL H. EIGENMANN; ALLEN A. NORRIS.

Imparfinis Eigenmann & Norris, 351; orthotype I. PIPERATUS Eigenmann & Norris.
Goeldiella Eigenmann & Norris, 353; orthotype PIMELODUS EQUES M. & T.
Iheringichthys Eigenmann & Norris, 354; orthotype PIMELODUS LABROSUS Kröyer.
Perugia Eigenmann & Norris, 355; orthotype PIRINAMPUS AGASSIZI Steind.
Bergiella Eigenmann & Norris, 355; orthotype PIMELODUS WESTERMANNI Reinh.
Catabasis Eigenmann & Norris, 358; orthotype C. ACUMINATUS Eigenmann & Norris.

1841. GILBERT (1900). *Results of the Branner-Agassiz Expedition to Brasil. III. The Fishes.* Proc. Wash. Ac., II, 161-184.

CHARLES HENRY GILBERT.

Brannerella Gilbert, 180; orthotype B. BRASILIENSIS Gilbert.

1842. JORDAN (1900). *Notes on Recent Fish Literature.* Amer. Naturalist, XXXIV, 897-899.

DAVID STARR JORDAN.

Dolloa Jordan, 897; orthotype CORYPHÆNOIDES LONGIFILIS Gthr. Substitute for MOSELEYA G. & B., preoccupied.

1843. JORDAN & EVERMANN (1900). *The Fishes of North & Middle America; a Descriptive Catalogue of the Species of Fish-like Vertebrates Found in the Waters of North America, North of the Isthmus of Panama.* Part IV, Bull. U. S. Nat. Mus., No. 47, 3137-3313.

DAVID STARR JORDAN; BARTON WARREN EVERMANN.

Orcula Jordan & Evermann, 3140; orthotype NOTROPIS ORCA Woolman. A substitute for ORCELLA J. & E., preoccupied in CETACEA.

Rhegma (Gilbert) Jordan & Evermann, 3169; orthotype R. THAUMASIUM Gilbert.

1844. JORDAN & SNYDER (1900). *A List of Fishes Collected in Japan by Keinosuke Otaki, and by the United States Steamer "Albatross," with Descriptions of Fourteen New Species.* Proc. U. S. Nat. Mus., XXIII, 335–380. (Dec. 20, 1890.)

DAVID STARR JORDAN; JOHN OTTERBEIN SNYDER.

Otakia Jordan & Snyder, 345; orthotype O. RASBORINA Jordan & Snyder.

Ischikauia Jordan & Snyder, 346; orthotype OPSARIICHTHYS STEENACKERI Sauvage.

Konosirus Jordan & Snyder, 349; orthotype CHATOËSSUS NASUS Bloch. A synonym of CLUPANODON Lac., as now properly restricted.

Bryttosus Jordan & Snyder, 354; orthotype SERRANUS KAWAMEBARI T. & S.

Eteliscus Jordan & Snyder, 355; orthotype ETELIS BERYCOIDES Hilgendorf. Equivalent to CORUSCULUS Jordan & Snyder. Both are synonyms of DODERLEINIA Steind.

Insidiator Jordan & Snyder, 368; orthotype PLATYCEPHALUS RUDIS Gthr. = PLATYCEPHALUS MEERDERVOORTI Blkr.

Trifissus Jordan & Snyder, 373; orthotype T. IOTURUS Jordan & Snyder. A synonym of TRIDENTIGER Gill.

Rhombiscus Jordan & Snyder, 379; orthotype RHOMBUS CINNAMOMEUS T. & S. A synonym of PSEUDORHOMBUS Blkr.

Kareius Jordan & Snyder, 379; orthotype PLEURONECTES SCUTIFER Steind.

Usinosita Jordan & Snyder, 380; orthotype PLAGUSIA JAPONICA T. & S., misprinted USINOSTIA. A synonym of RHINOPLAGUSIA Blkr.

Zebrias Jordan & Snyder, 380; orthotype SOLEA ZEBRINA T. & S.

Areliscus Jordan & Snyder, 380; orthotype SOLEA JOYNERI Gthr.

1845. KYLE (1900). *On a New Genus of Flat-Fishes from New Zealand.* Proc. Zool. Soc. London, 1900, 986–992.

HARRY M. KYLE.

Apsetta Kyle, 986; orthotype A. THOMPSONI Kyle.

1846. LOOMIS (1900). *Die Anatomie und die Verwandschaft der Ganoid-und Knochen-Fische aus der Kreide-Formation von Kansas, U. S. A.* Palæontgr., XLVI, 213–284.

FREDERICK BREWSTER LOOMIS (1873–).

Pseudothryptodus Loomis, 225; orthotype P. INTERMEDIUS Loomis (fossil).

Thryptodus Loomis, 229; logotype PLETHODUS ZITTELI Loomis (fossil). Apparently replaces ANOGMIUS Cope, 1877 (A. ARATUS), not of 1871 (A. CONTRACTUS).

Syntegomodus Loomis. 252; orthotype S. ALTUS Loomis (fossil).

1847. NIKOLSKII (1900). *Pseudoscaphirhynchus rossikowi n. gen. et spec.* Ann. Mus. St. Petersb., IV, 257–259.

ALEKSANDR MIKHAILOVICH NIKOLSKII.

Pseudoscaphirhynchus Nikolskii, 257; orthotype P. ROSSIKOWI Nikolskii = SCAPHIRHYNCHUS HERMANNI (Sewertov) Kessler. A synonym of KESSLERIA Bogdanow.

1848. PELLÉGRIN (1900). *Poissons nouveaux ou rares du Congo Français.* Bull. Mus. Paris, 1900, 175–176, 348–354.

JACQUES PELLÉGRIN.

Mesoborus Pellégrin, 179; orthotype M. CROCODILUS Pellégrin.

Hemistichodus Pellégrin, 352; orthotype H. VAILLANTI Pellégrin. Replaces MONOSTICHODUS Vaillant, said to be "nomen nudum."

Monostichodus (Vaillant) Pellégrin, 352; orthotype (HEMISTICHODUS VAILLANTI Pellégrin). A "nomen nudum" quoted by Pellégrin, said to be synonymous with HEMISTICHODUS.

1849. PELLÉGRIN (1900). *Poisson nouveau du lac Baikal.* Bull. Mus. Paris, 1900, 354–356.

JACQUES PELLÉGRIN.

Cottocomephorus Pellégrin, 354; orthotype C. MEGALOPS Pellégrin.

1850. WAITE (1900). *Additions to the Fish-Fauna of Lord Howe Island.* Rec. Austr. Mus., III, 193–209.

EDGAR RAVENSWOOD WAITE.

Acanthocaulus Waite, 206; orthotype PRIONURUS MICROLEPIDOTUS Lac. A substitute for PRIONURUS Lac., 1804, wrongly supposed to be preoccupied, the date of the latter being assumed as 1830, the time of a reprint.

Euchilomycterus Waite, 208; orthotype E. QUADRATICATUS Waite.

1851. WILLISTON (1900). *Some Fossil Teeth from the Kansas Cretaceous.* Kansas Quart., VIII, 27–42.

SAMUEL WENDALL WILLISTON.

Leptostyrax Williston, 42; orthotype L. BISCUSPIDATUS Williston (fossil).

1852. WOODWARD (1900). *On a New Ostracoderm (Euphanerops longævus) from the Upper Devonian of Scaumenac Bay, Province of Quebec, Canada.* Ann. Mag. Nat. Hist. (7), V, 416–419.

ARTHUR SMITH WOODWARD.

Euphanerops Woodward, 416; orthotype E. LONGÆVUS Woodw. (fossil).

1853. WOODWARD (1900). *Evidence of an Extinct Eel (Urenchelys anglicus) from the Upper Devonian of Scaumenac Bay, Province of Quebec, Canada.* Ann. Mag. Nat. Hist. (7), V, 321–323.

ARTHUR SMITH WOODWARD.

Urenchelys Woodward, 322; logotype ANGUILLA HAKELENSIS Davis (fossil).

Pronotacanthus Woodward, 322; orthotype ANGUILLA SAHEL-ALMÆ Davis (fossil).

1854. ZITTEL (1900). *Handbuch der Palæontologie, III.* Pt. XII, 1890.

KARL A. ZITTEL.

Phlyctænium Zittel, 159; orthotype COCCOSTEUS ACADICUS Whiteaves (fossil). A substitute for PHLYCTÆNIUS Traquair, preoccupied, but PHLYCTÆNASPIS Traquair, 1890, has priority.

1901.

1855. ABBOTT (1901). *List of Fishes Collected in the River Pei-Ho at Tien-Tsin, China, by Noah Fields Drake, with Descriptions of Seven New Species.* Proc. U. S. Nat. Mus., XXIII, 483–491. (February 25, 1901.)

JAMES FRANCIS ABBOTT (1876–).

Culticula Abbott, 485; orthotype C. EMMELAS Abbott.

1856. AMMON (1901). *Ueber eine Tiefbohrung durch den Buntsandstein und die Zechssteinschichten bei Meelrichstadt an der Rhön.* Geogn. Jahresb. München, XIII.

LUDWIG VON AMMON.

Ephippites Von Ammon, 59; orthotype E. PEISSENBERGIENSIS Ammon (fossil).

1857. BOULENGER (1901). *Third Contribution to the Ichthyology of Lake Tanganyika. Report on the Collection Made by Mr. J. E. S. Moore in Lake Tanganyika and Kivu during His Second Expedition, 1899–1900.* Trans. Zool. Soc. London, XVI, 137–178.

GEORGE ALBERT BOULENGER.

Gephyrochromis Boulenger, 156; orthotype G. MOORII Boulenger.
Asprotilapia Boulenger, 159; orthotype A. LEPTURA Boulenger.

1858. BOULENGER (1901). *Diagnosis of New Fishes Discovered by Mr. W. L. S. Loat in the Nile.* Ann. Mag. Nat. Hist. (7), VII, 444–446.

GEORGE ALBERT BOULENGER.

Cromeria Boulenger, 445; orthotype C. NILOTICA Boulenger.
Physailia Boulenger, 445; orthotype P. PELLUCIDA Boulenger.

1859. BOULENGER (1901). *Notes on the Classification of Teleostean Fishes. I. On the Trachinidæ and Their Allies.* Ann. Mag. Nat. Hist. (7), VII, 261–271.

GEORGE ALBERT BOULENGER.

Rhyacichthys Boulenger, 267; orthotype P. ASPRO Van Hasselt. A substitute for PLATYPTERA (Kuhl & Van Hasselt) Cuv. & Val.; preoccupied in files, Meigen, 1803.

1860. BOULENGER (1901). *On the Fishes Collected by Dr. W. J. Ansorge in the Niger Delta.* Proc. Zool. Soc. London, 1901, 4–10.

GEORGE ALBERT BOULENGER.

Polycentropsis Boulenger, 8; orthotype P. ABBREVIATA Boulenger.

1861. BOULENGER (1901). *On Some Deep-Sea Fishes Collected by Mr. F. W. Townsend in the Sea of Oman.* Ann. Mag. Nat. Hist. (7), VII, 261–263.

GEORGE ALBERT BOULENGER.

Parascolopsis Boulenger, 262; orthotype P. TOWNSENDI Boulenger.

1862. BRAUER (1901). *Ueber einige von der Valdivia-Expedition gesemmelte Tiefseefische und ihre Augen.* Sitzber. Ges. Marburg, 1901, 115–130.

AUGUST BRAUER.

Winteria Brauer, 126; orthotype W. TELESCOPA Brauer.
Dolichopteryx Brauer, 127; orthotype D. LONGIPES Brauer.
Gigantura Brauer, 128; orthotype G. CHUNI Brauer.

1863. COLLETT (1901). *Om fem for Norges fauna nye fiske.* Arch. Math. Naturv. Christiania, XXIII, 125.

ROBERT COLLETT.

Bathyalopex Collett, 5; orthotype CHIMÆRA MIRABILIS Collett.

1863A. DEAN (1901). *Further Notes on the Relationships of the Arthrognathi. Palæontological Notes.* Mem. N. Y. Acad. Sci., II, 110 to 123.

BASHFORD DEAN (1867–).

Selenosteus Dean, 110; orthotype S. KEPLERI Dean (fossil).
Stenosteus Dean, 110; orthotype S. GLABERI Dean (fossil).

1864. EIGENMANN & NORRIS (1901). *Bergiaria.* Comun. Mus. Buenos Aires, 272.

CARL H. EIGENMANN; ALLEN A. NORRIS.

Bergiaria Eigenmann & Norris, 272; orthotype PIMELODUS WESTERMANNI Reinh. Substitute for BERGIELLA Eigenmann & Norris, preoccupied.

1865. FOWLER (1901). *Description of a New Hemiramphid.* Proc. Acad. Nat. Sci. Phila., 1901, 293–294.

HENRY WEED FOWLER.

Hemiexocœtus Fowler, 293; orthotype H. CAUDIMACULATUS Fowler.

1866. FOWLER (1901). *Note on the Odontostomidæ.* Proc. Acad. Nat. Sci. Phila., 1901, 211-212.

HENRY WEED FOWLER.

Evermanella Fowler, 211; orthotype ODONTOSTOMUS HYALINUS Cocco. Substitute for ODONTOSTOMUS Cocco, preoccupied in Mollusks, Beck, 1837.

1867. GARMAN (1901). *Genera and Families of Chimæroids.* Proc. New England Zool. Club, II, 75–77.

SAMUEL GARMAN.

Rhinochimæra Garman, 75; orthotype HARRIOTTA PACIFICA Mitsukuri.

1868. GILL & TOWNSEND (1901). *The Largest Deep-Sea Fish.* Science (2), XIV, 937–938.

THEODORE NICHOLAS GILL; CHARLES HASKINS TOWNSEND (1859–).

Macrias Gill & Townsend, 937; orthotype M. AMISSUS Gill & Townsend.

1869. GREELEY (1901). *Notes on the Tide-Pool Fishes of California, with a Description of Four New Species.* Bull. U. S. Fish Comm., XIX, 7–20.

ARTHUR WHITE GREELEY (1875–1904).

Rusciculus Greeley, 13; orthotype R. RIMENSIS Greeley.

Dialarchus Greeley, 14; orthotype D. SNYDERI Greeley.

Eximia Greeley, 18; orthotype E. RUBELLIO Greeley. Name preoccupied: Karl Jordan, 1894; it may be replaced by the new name GREELEYA Jordan, in honor of the very able young naturalist, discoverer of the species.

1870. JENKINS (1901). *Descriptions of Fifteen New Species of Fishes from the Hawaiian Islands.* Bull. U. S. Fish Comm., XIX, 387–407.

OLIVER PEEBLES JENKINS (1850–).

Eumycterias Jenkins, 399; orthotype E. BITÆNIATUS Jenkins. A synonym of CANTHIGASTER Sw.

Scaridea Jenkins, 468; orthotype S. ZONARCHA Jenkins.

1871. JORDAN & SNYDER (1901). *Descriptions of Three New Species of Fishes from Japan.* Proc. Calif. Acad. Sci. (3), II, 381–386.

DAVID STARR JORDAN; JOHN OTTERBEIN SNYDER.

Ereunias Jordan & Snyder, 377; orthotype E. GRALLATOR Jordan & Snyder.

Draciscus Jordan & Snyder, 379; orthotype D. SACHI Jordan & Snyder.

1872. JORDAN & SNYDER (1901). *List of Fishes Collected in 1883 and 1885 by Pierre Louis Jouy and preserved in the United States National Museum, with Descriptions of Six New Species.* Proc. U. S. Nat. Mus., XXIII, 740–769. (July 21, 1901.)

DAVID STARR JORDAN; JOHN OTTERBEIN SNYDER.

Chasmias Jordan & Snyder, 761; orthotype C. MISAKIUS Jordan & Snyder. Name preoccupied, replaced by CHASMICHTHYS Jordan & Snyder.

Watasea Jordan & Snyder, 765; orthotype W. SIVICOLA Jordan & Snyder.

1873. JORDAN & SNYDER (1901). *A Preliminary Check-List of the Fishes of Japan.* Annot. Zool. Jap., III, 31–159.

DAVID STARR JORDAN; JOHN OTTERBEIN SNYDER.

Corusculus Jordan & Snyder, 75; orthotype ANTHIAS BERYCOIDES Hilgendorf. A synonym of DODERLEINIA Steind., the definition being that of ETELISCUS duplicated by accident.

1874. JORDAN & SNYDER (1901). *Descriptions of Nine New Species of Fishes Contained in Museums of Japan.* Journ. Coll. Sci. Tokyo, XV, 301–311.

DAVID STARR JORDAN; JOHN OTTERBEIN SNYDER.

Bentenia Jordan & Snyder, 306; orthotype B. ÆSTICOLA Jordan & Snyder.

Ebisus Jordan & Snyder, 308; orthotype E. SAGAMIUS Jordan & Snyder. A synonym of ERILEPIS Gill.

1875. JORDAN & SNYDER (1901). *Fishes of Japan.* Am. Nat., XXXV.

DAVID STARR JORDAN; JOHN OTTERBEIN SNYDER.

Chasmichthys Jordan & Snyder, 941; orthotype CHASMIAS MISAKIUS Jordan & Snyder. Substitute for CHASMIAS Jordan & Snyder, preoccupied.

1876. JORDAN & SNYDER (1901). *A Review of the Apodal Fishes of Japan, with Descriptions of Nineteen New Species.* Proc. U. S. Nat. Mus., XXIII, 837–890. (Aug. 28, 1901.)

DAVID STARR JORDAN; JOHN OTTERBEIN SNYDER.

Chlevastes Jordan & Snyder, 867; orthotype OPHICHTHYS COLUBRINUS Boddaert.

Xyrias Jordan & Snyder, 868; orthotype X. REVULSUS Jordan & Snyder.

Æmasia Jordan & Snyder, 883; orthotype Æ. LICHENOSA Jordan & Snyder.

Scuticaria Jordan & Snyder, 886; orthotype ICHTHYOPHIS TIGRINUS Lesson.

1877. JORDAN & SNYDER (1901). *A Review of the Gobioid Fishes of Japan, with Descriptions of Twenty-one New Species.* Proc. U. S. Nat. Mus., XXIV, 33–132. (Sept. 25, 1901.)

DAVID STARR JORDAN; JOHN OTTERBEIN SNYDER.

Vireosa Jordan & Snyder, 38; orthotype V. HANÆ Jordan & Snyder.

Hazeus Jordan & Snyder, 51; orthotype H. OTAKII Jordan & Snyder. A synonym of GNATHOLEPIS Blkr.

Chloëa Jordan & Snyder, 78; orthotype GOBIUS CASTANEA O'Shaughnessy. Not CHLOEIA Savigny, 1817, a genus of worms. CHLOËA is a personal name.

Suruga Jordan & Snyder, 96; orthotype S. FUNDICOLA Jordan & Snyder.

Sagamia Jordan & Snyder, 100; orthotype S. RUSSULA Jordan & Snyder.

Ainosus Jordan & Snyder, 109; orthotype GOBIUS GENEIONEMA Hilgendorf.

Astrabe Jordan & Snyder, 119; orthotype A. LACTISELLA Jordan & Snyder.

Clariger Jordan & Snyder, 120; orthotype C. COSMURUS Jordan & Snyder.

Eutæniichthys Jordan & Snyder, 122; orthotype E. GILLI Jordan & Snyder.

1878. JORDAN & SNYDER (1901). *A Review of the Hypostomide and Lophobranchiate Fishes of Japan.* Proc. U. S. Nat. Mus., XXIV, 1–20. (Oct. 1. 1901.)

DAVID STARR JORDAN; JOHN OTTERBEIN SNYDER.

Zalises Jordan & Snyder, 2; orthotype Z. UMITENGU Jordan & Snyder. A synonym of PEGASUS L.

Yozia Jordan & Snyder, 8; orthotype Y. WAKANOURÆ Jordan & Snyder.

1879. JORDAN & SNYDER (1901). *A Review of the Cardinal Fishes of Japan.* Proc. U. S. Nat. Mus., XXIII, 891-913. (Oct. 12, 1901.)

DAVID STARR JORDAN; JOHN OTTERBEIN SNYDER.

Telescopias Jordan & Snyder, 909; orthotype T. GILBERTI Jordan & Snyder.

1880. JORDAN & STARKS (1901). *Descriptions of Three New Species of Fishes from Japan.* Proc. Calif. Acad. Sci. (3), II, 381-386.

DAVID STARR JORDAN; EDWIN CHAPIN STARKS (1867-).

Snyderina Jordan & Starks, 381; orthotype S. YAMANOKAMI Jordan & Starks.

1881. JORDAN & STARKS (1901). *A Review of the Atherine Fishes of Japan.* Proc. U. S. Nat. Mus., XXIV, 198-206. (Oct. 4, 1901.)

DAVID STARR JORDAN; EDWIN CHAPIN STARKS.

Atherion Jordan & Starks, 203; orthotype A. ELYMUS Jordan & Starks.

Iso Jordan & Starks, 204; orthotype I. FLOS-MARIS Jordan & Starks. Replaces TROPIDOSTHETHUS Ogilby, preoccupied.

1882. LAUBE. (1901). *Synopsis der Wirbelthierfauna der Böhmischen Braunkoklenformation und Beschreibung neuer, oder bisher unvollständig bekannter Arten.* Prag., 1901, 80 pp.

GUSTAVE CARL LAUBE (1839-).

Protothymallus Laube, 23; orthotype THAUMATURUS LUSATUS Laube (fossil).

1883. TRAQUAIR (1901). *Notes on the Lower Carboniferous Fishes of Eastern Fifeshire.* Geol. Mag. (2), Dec., IV, VIII, 110-114.

RAMSAY HEATLEY TRAQUAIR.

Eucentrurus Traquair, 114; orthotype E. PARADOXUS Traquair (fossil).

1884. WELLBURN (1901). *On the Fish Fauna of the Millstone Grits of Great Britain.* Geol. Mag. (2), Dec. IV, 216-222.

EDGAR D. WELLBURN.

Euctenodopsis Wellburn, 220; orthotype E. TENUIS Wellburn (fossil).

1885. WILLEY (1901). *Dolichorhynchus indicus, a New Acraniate.* Quart. Journ. Micr. Sci. (2), XLIV, 269-271.

ARTHUR WILLEY (1867-).

Dolichorhynchus Willey, 269; orthotype D. INDICUS Willey.

1886. WOODWARD (1901). *Catalogue of Fossil Fishes in the British Museum Natural Hist.* Part IV, etc., 636 pp.

ARTHUR SMITH WOODWARD.

Elopides (Agassiz) Woodward, 23; orthotype E. COULONI Ag. (fossil). Printed as name only in *Poissons Fossiles,* V, 1844, 139. A fossil homologue of ELOPS L.

Notelops Woodward, 27; orthotype RHACOLEPIS BRAMA Ag. = CALAMOPLEURUS CYLINDRICUS Ag. (fossil). A synonym of CALAMOPLEURUS Ag.

Esocelops Woodward, 46; orthotype EURYGNATHUS CAVIFRONS Ag. (fossil). A substitute for EURYGNATHUS Ag., preoccupied.

Chanoides Woodward, 63; orthotype CLUPEA MACROPOMA Ag. (fossil).

Brychætus Woodward, 76; orthotype B. MUELLERI Woodw. (fossil). Name only in 1845; validated in 1901.

Histiothrissa Woodward, 131; orthotype SARDINIUS MACRODACTYLUS Von der Marck (fossil).

Halecopsis Woodward, 133; orthotype Osmeroides insignis Delvaux & Ortlieb (fossil).

Apateodus Woodward, 258; orthotype Pachyrhizodus glyphodus Blake (fossil).

Pachylebias Woodward, 294; orthotype Lebias crassicaudatus Ag. (fossil).

Rhynchorhinus (Agassiz) Woodward, 342; orthotype R. branchialis Ag. (fossil). Name printed without explanation in 1844.

Protaulopsis Woodward, 371; orthotype P. bolcensis Woodward (fossil).

Dinopteryx Woodward, 406; orthotype Hoplopteryx spinosus Davis (fossil).

Isurichthys Woodward, 453; logotype Isurus macrurus Ag. (fossil). Name a substitute for Isurus Ag., preoccupied.

Eothynnus Woodward, 457; orthotype Cœlocephalus salmoneus Ag. (fossil). Name a substitute for Cœlocephalus Ag., undefined and preoccupied by Clark, 1860, in Coleoptera.

Phalacrus (Agassiz) Woodward, 458; orthotype P. cybioides Ag. (fossil). Note on type specimen. A synonym of Eothynnus Woodward.

Cariniceps (Owen) Woodward, 458; orthotype C. compressus Owen (fossil). Note on type specimen. A synonym of Eothynnus Woodw.

Rhonchus (Agassiz) Woodward, 458; orthotype R. carangoides Ag. (fossil). Note on type specimen. A synonym of Eothynnus Woodw.

Scombrinus (Agassiz) Woodward, 461; orthotype S. nuchalis Ag. (fossil). Validation of a nomen nudum printed in 1845.

Eocœlopoma Woodward, 470; orthotype E. colei Woodw. (fossil).

Scombramphodon Woodward, 474; orthotype Amphodon benedeni Storms (fossil). Replaces Amphodon Storms, 1887, regarded as preoccupied by Amphodus Peters, 1872.

Acestrus (Agassiz) Woodward, 494; orthotype A. ornatus Woodw. (fossil). Nomen nudum as printed in 1845, validated in 1901; perhaps to be regarded as preoccupied by Acestra Jardine, 1831.

Auchenilabrus (Agassiz) Woodward, 552; orthotype A. frontalis Ag. Name only, reprinted from Agassiz, 1845, 308, when it is also nomen nudum.

Eocottus Woodward, 580; orthotype Gobius veronensis Volta (fossil).

1902.

1887. BOULENGER (1902). *Report on the Collection of Natural History Made in the Antarctic Regions during the Voyage of the "Southern Cross."* Pisces, London, 174–189.

George Albert Boulenger.

Pleuragramma Boulenger, 187; orthotype P. antarcticum Boulenger. Not Pleurogrammus Gill.

1888. BOULENGER (1902). *Additions à la faune ichthyologique du Bassin du Congo.* Ann. Mus. Cong. Zool., II, 19–57.

George Albert Boulenger.

Microthrissa Boulenger, 26; orthotype M. royauxi Boulenger.

Leptoglanis Boulenger, 42; orthotype L. xenognathus Boulenger.

Paraphractura Boulenger, 47; orthotype P. tenuicauda Boulenger.

Trachyglanis Boulenger, 48; orthotype T. minutus Boulenger.

Belonoglanis Boulenger, 50; orthotype B. tenuis Boulenger.

1889. BOULENGER (1902). *Descriptions of New Characinid Fish Discovered by Dr. W. J. Ansorge in Southern Nigeria.* Ann. Mag. Nat. Hist. (7), IX, 144–145.

GEORGE ALBERT BOULENGER.

Citharidium Boulenger, 144; orthotype C. ANSORGII Boulenger.

1890. BOULENGER (1902). *Description of a New Deep-Sea Gadid Fish from South Africa.* Ann. Mag. Nat. Hist. (7), IX, 335–336.

GEORGE ALBERT BOULENGER.

Tripterophycis Boulenger, 335; orthotype T. GILCHRISTI Boulenger.

1891. BOULENGER (1902). *Notes on the Classification of Teleostean Fishes.* Ann. Mag. Nat. Hist. (7), IX, 197–204.

GEORGE ALBERT BOULENGER.

Geophyroberyx Boulenger, 203; orthotype TRACHICHTHYS DARWINI Johnston.

1892. BOULENGER (1902). *Description of a New South-African Galeid Selachian.* Ann. Mus. Nat. Hist (7), X, 52–63.

GEORGE ALBERT BOULENGER.

Scylliogaleus Boulenger, 51; orthotype S. QUECKETTI Boulenger.

1893. BOULENGER (1902). *Diagnoses of New Cichlid Fishes Discovered by Mr. J. E. S. Moore in Lake Njassa.* Ann. Mag. Nat. Hist. (7), 69–71.

GEORGE ALBERT BOULENGER.

Hemitilapia Boulenger, 70; orthotype H. OXYRHYNCHUS Boulenger.
Cyrtocara Boulenger, 70; orthotype C. MOORI Boulenger.

1894. BOULENGER (1902). *On the Genus Ateleopus of Schlegel.* Ann. Mag. Nat. Hist. (7), X, 402–403.

GEORGE ALBERT BOULENGER.

Podateles Boulenger, 403; orthotype ATELEOPUS JAPONICUS Blkr. Substitute for ATELEOPUS T. & S., regarded as preoccupied by ATELOPUS Duméril & Bibron, a genus of reptiles.

1895. BOULENGER (1902). *Contributions to the ichthyology of the Congo.* Proc. Zool. Soc. London, 1902, 234–237.

GEORGE ALBERT BOULENGER.

Allabenchelys Boulenger, 234; orthotype A. LONGICAUDA Boulenger.
Chilochromis Boulenger, 236; orthotype C. DUPONTI Boulenger.

1896. BRAUER (1902). *Diagnosen von neuen Tiefseefischen welche von der Valdivia-Expedition gesammelt sind.* Zool. Anz., XXV, 277–298.

AUGUST BRAUER.

Dissomma Brauer, 278; orthotype D. ANALE Brauer.
Triplophos Brauer, 282; orthotype T. ELONGATUS Brauer.
Macrostomias Brauer, 283; orthotype M. LONGIBARBATUS Brauer.
Melanostomias Brauer, 284; orthotype M. VALDIVIÆ Brauer.
Bathylynchus Brauer, 289; orthotype B. CYNÆUS Brauer.
Macropharynx Brauer, 290; orthotype M. LONGICAUDATUS Brauer. Called MEGALOPHARYNX by Brauer in 1900.
Cœlophrys Brauer, 291; orthotype C. BREVICAUDATA Brauer.
Gigantactis Brauer, 295; orthotype G. VANHOEFFENI Brauer.
Aceratias Brauer, 296; logotype A. MACRORHYNCHUS Brauer.
Stylophthalmus Brauer, 298; orthotype S. PARADOXUS Brauer.

1897. EASTMAN (1902). *On Campyloprion, a New Form of Edestus-like Dentition.* Geol. Mag. (8), IX, 148–152.

CHARLES ROCHESTER EASTMAN.

Campyloprion Eastman, 151; orthotype C. ANNECTENS Eastman (fossil). Shark, locality unknown.

1898. FRITSCH & BAYER (1902). *Nové Ryby Ceskeho útvarn Krédového.* Ceska Ak. Preze, II, 1–18.

ANTON FRITSCH; EDWIN BAYER.

Schizospondylus Fritsch & Bayer, 8; orthotype S. DUBIUS Fritsch & Bayer.
Parelops Fritsch & Bayer, 13; orthotype P. PARAZAKII Fritsch & Bayer (fossil).

1899. GILCHRIST (1902). *South African Fishes.* Marine Investigations in South Africa, II, 101–113.

J. D. F. GILCHRIST.

Choridactylodes Gilchrist, 101; orthotype C. NATALENSIS Gilchrist.
Melanonosoma Gilchrist, 106; orthotype M. ACUTICAUDATUM Gilchrist.
Paralichthodes Gilchrist, 108; orthotype P. ALGOENSIS Gilchrist.

1900. GRACIANOV (1902). *Die Ichthyo-fauna des Baikalsees; Dnevn.* Zool. Otd. Obsc. Liub. Jest. Moska, III, 18–61. (In Russian.)

VALERIAN GRACIANOV.

Procottus Gracianov (Gratzianow), 41; orthotype COTTUS JEITTELESI Dybowski.

1901. GÜNTHER (1902). *Third Notice of New Species of Fishes from Morocco.* Novitat. Zool. (Tring.), IX, 446–448.

ALBERT GÜNTHER.

Pterocapoeta Günther, 446; orthotype P. MAROCCANA Gthr.

1902. GÜNTHER (1902). *Last Account of Fishes Collected by Mr. R. B. N. Walker, on the Gold Coast.* Proc. Zool. Soc. London, 1902, II, 330–339.

ALBERT GÜNTHER.

Notoglanidium Günther, 336; orthotype N. WALKERI Gthr.

1903. JORDAN & EVERMANN (1902). *Notes on a Collection of Fishes from the Island of Formosa.* Proc. U. S. Nat. Mus., XXV, 315–368. (Sept. 24. 1902.)

DAVID STARR JORDAN; BARTON WARREN EVERMANN.

Zacco Jordan & Evermann, 322; orthotype LEUCISCUS PLATYPUS T. & S.
Evenchelys Jordan & Evermann, 327; orthotype GYMNOTHORAX MACRURUS Bloch. Same as THYRSOIDEA Kaup, as restricted by Bleeker, but by tautonomy Kaup's genus THYRSOIDEA must have MURÆNA THYRSOIDEA Rich., as type.

1904. JORDAN & FOWLER (1902). *A Review of the Trigger-Fishes, File-Fishes, and Trunk-Fishes of Japan.* Proc. U. S. Nat. Mus., XXV, 251–286. (Sept. 17, 1902.)

DAVID STARR JORDAN; HENRY WEED FOWLER.

Rudarius Jordan & Fowler, 270; orthotype R. ERCODES Jordan & Fowler.
Lactoria Jordan & Fowler, 278; orthotype OSTRACION CORNUTUS L.

1905. JORDAN & FOWLER (1902). *A Review of the Cling-Fishes (Gobiesocidæ) of the Waters of Japan.* Proc. U. S. Nat. Mus., XXV. (Sept. 19, 1902.)

DAVID STARR JORDAN; HENRY WEED FOWLER.

Aspasma Jordan & Fowler, 414; orthotype LEPADOGASTER MINIMUS Döderlein.

1906. JORDAN & FOWLER (1902). *A Review of the Ophidioid Fishes of Japan.* Proc. U. S. Nat. Mus., XXV, 743–786. (Dec. 2, 1902.)

DAVID STARR JORDAN; HENRY WEED FOWLER.

Heirichthys Jordan & Fowler, 744; orthotype H. ENCRYPTES Jordan & Fowler. A synonym of CONGROGADUS Gthr.

1907. JORDAN & SNYDER (1903). *A Review of the Discobolous Fishes of Japan.* Proc. U. S. Nat. Mus., XXIV, 343–51. (Feb. 10, 1902.)

DAVID STARR JORDAN; JOHN OTTERBEIN SNYDER.

Crystallias Jordan & Snyder, 349; orthotype C. MATSUSHIMÆ Jordan & Snyder.

1908. JORDAN & SNYDER (1902). *A Review of the Trachinoid Fishes and Their Supposed Allies found in the Waters of Japan.* Proc. U. S. Nat. Mus., XXIV, 461–497. (Mar. 28, 1902.)

DAVID STARR JORDAN; JOHN OTTERBEIN SNYDER.

Pteropsaron Jordan & Snyder, 470; orthotype P. EVOLANS Jordan & Snyder.
Ariscopus Jordan & Snyder, 479; orthotype A. IBURIUS Jordan & Snyder.
Stalix Jordan & Snyder, 495; orthotype S. HISTRIO Jordan & Snyder.

1909. JORDAN & SNYDER (1902). *A Review of the Labroid Fishes and Related Forms found in the Waters of Japan.* Proc. U. S. Nat. Mus., XXV, 595–662. (May 2, 1902.)

DAVID STARR JORDAN; JOHN OTTERBEIN SNYDER.

Verreo Jordan & Snyder, 619; orthotype COSSYPHUS OXYCEPHALUS Blkr.
Ampheces Jordan & Snyder, 628; orthotype ANAMPSES GEOGRAPHICUS Cuv. & Val.

1910. JORDAN & SNYDER (1902). *Description of Two New Species of Squaloid Sharks from Japan.* Proc. U. S. Nat. Mus., XXV, 79–81. (Sept. 2, 1902.)

DAVID STARR JORDAN; JOHN OTTERBEIN SNYDER.

Deania Jordan & Snyder, 80; orthotype D. EGLANTINA Jordan & Snyder, regarded by Garman as a synonym of ACANTHIDIUM Lowe, but the logotype of that genus, as first restricted is an ETMOPTERUS. Not DEANEA, 1875, a genus of PROTOZOA, the name of the fish genus of different origin, being dedicated to Bashford Dean.

1911. JORDAN & SNYDER (1902). *A Review of the Blennioid Fishes of Japan.* Proc. U. S. Nat. Mus., XXV, 441–504. (Sept. 26, 1902.)

DAVID STARR JORDAN; JOHN OTTERBEIN SNYDER.

Zacalles Jordan & Snyder, 448; orthotype Z. BRYOPE Jordan & Snyder; name preoccupied, replaced by CALLIBLENNIUS Barbour.
Azuma Jordan & Snyder, 463; orthotype A. EMMNION Jordan & Snyder.
Zoarchias Jordan & Snyder, 480; orthotype Z. VENEFICUS Jordan & Snyder.
Abryois Jordan & Snyder, 486; orthotype A. AZUMÆ Jordan & Snyder.

1912. JORDAN & SNYDER (1902). *On Certain Species of Fishes Confused with Bryostemma polyactocephalum.* Proc. Nat. Mus., XXV. (Nov. 5, 1902.)

DAVID STARR JORDAN; JOHN OTTERBEIN SNYDER.

Bryolophus Jordan & Snyder, 618; orthotype B. LYSIMUS Jordan & Snyder.

1913. JORDAN & STARKS (1902). *A Review of the Hemibranchiate Fishes of Japan.* Proc. U. S. Nat. Mus., XXVI, 57–73. (Dec. 2, 1902.)

DAVID STARR JORDAN; EDWIN CHAPIN STARKS.*

Æoliscus Jordan & Starks, 71; orthotype AMPHISILE STRIGATA Gthr.

1914. LAMBE (1902). *New Genera and Species from the Belly River Series (Mid-Cretaceous).* Contr. Canad. Pal., III, 25–81.

LAWRENCE M. LAMBE.

Diphyodus Lambe, 30; orthotype D. LONGIROSTRIS Lambe (fossil).

1915. MEEK (1902). *A Contribution to the Ichthyology of Mexico.* Field Mus. Zool., III, 63–128.

SETH EUGENE MEEK.

Zoogoneticus Meek, 91; logotype Z. DIAZI Meek.

Chapalichthys Meek, 97; orthotype CHARACODON ENCAUSTUS Jordan & Snyder.

Skiffia Meek, 102; orthotype S. LERMÆ Meek.

Melaniris Meek, 117; orthotype M. BALSANUS Meek. A synonym of THYRINA Jordan & Culver.

1916. POPTA (1902). *Notes from the Leyden Museum.*

CANNA M. L. POPTA.

Paracrossochilus Popta, 200; orthotype P. BICORNIS Popta = CROSSOCHILUS VITTATUS Boulenger.

1917. RIBEIRO (1902). *Oito especies de peixes do Rio Pomba.* Bol. Soc. Nac. Agric., Rio de Janeiro.

ALIPIO DE MIRANDA RIBEIRO.

Platycephalus Ribeiro, 7; type SCIÆNA UNDECIMALIS Bloch. A preoccupied name substituted for CENTROPOMUS Lac. "in accordance with the laws of priority."

1918. ROHON (1902). *Beiträge zur Anatomie und Histologie der Psammosteiden.* Sitzber. Böhmisch. Ges., 1901, No. XVI, 1–31.

JOSEF VICTOR ROHON.

Ganosteus Rohon, 36; logotype G. TUBERCULATUS Rohon.

1919. SMITH (1902). *The Smallest Known Vertebrate.* Science (2), XV, 30–31.

HUGH McCORMICK SMITH (1865–).

Mistichthys Smith, 30; orthotype M. LUZONENSIS Smith.

1920. SMITH (1902). *Description of a New Species of Blenny from Japan.* Bull. U. S. Fish Comm., XXI, 93–94.

HUGH McCORMICK SMITH.

Eulophias Smith, 93; orthotype E. TANNERI Smith.

1921. STEINDACHNER (1902). *Ueber zwei neue Fischarten aus dem Rothen Meere.* Anz. Ak. Wiss., XXXIX, 336–338.

FRANZ STEINDACHNER.

Beanea Steindachner, 337; orthotype B. TRIVITTATA Steind.

1922. VAILLANT (1902). *Résultats zoologiques de l'expédition scientifique Néerlandaise au Borneo central.* Notes Leyden Mus., XXIV, 1–166.

LÉON VAILLANT.

Pseudolais Vaillant, 51; orthotype P. TETRANEMA Vaillant.

Sosia Vaillant, 81; orthotype S. CHAMÆLEON Vaillant.

Gyrinochilus Vaillant, 107; orthotype G. PUSTULOSUS Vaillant.

Parhomaloptera Vaillant, 129; orthotype P. OBSCURA Vaillant.

Ellopostoma Vaillant, 145; orthotype APERIOPTUS MEGALOMYCTER Vaillant.

1923. WAITE (1902). *Notes on Fishes from Western Australia.* Rec. Austral. Mus., IV, 179–194.

EDGAR RAVENSWOOD WAITE (1866–).

Hypnarce Waite, 180; orthotype HYPNOS SUBNIGRUM Duméril. Substitute for HYPNOS Duméril, preoccupied.

Gilbertella Waite, 182; orthotype SERRANUS ARMATUS Castelnau. A synonym of EPINEPHELIDES Ogilby.

1924. WEBER (1902). *Siboga Expeditie. Introduction et description de l'Expédition.* Leiden, 1902, 159 pp.

MAX (CARL WILHELM) WEBER (1852–).

Photoblepharon Weber, 108; orthotype SPARUS PALPEBRATUS Boddaërt.

1925. WELLBURN (1902). *On the Fish Fauna of the Pendleside Limestones.* Proc. Yorkshire Geol. and Polytechnic Soc. New Series, XIV, 465–473.

EDGAR D. WELLBURN.

Marsdenius Wellburn, 466; orthotype M. SUMMITI Wellburn (fossil DIPLACANTHID: Carboniferous).

1926–1927. WOODWARD (1902). *The Fossil Fishes of the English Chalk.* I. Palæontogr. Soc., 1902, 1–56.

ARTHUR SMITH WOODWARD.

Trachichthyoides Woodward, 29; orthotype T. ORNATUS Woodw. (fossil).

1903.

1928. BERG (1903). *On the Taxonomy of the Cottidæ from Lake Baikal* (Russian text). Ann. Mus. Zool. St. Petersb., VIII, 99–114.

LEW SEMENOWITCH BERG.

Baicalocottus Berg, 100; orthotype COTTUS GREWINGKI Dybowski. A synonym of COTTOCOMEPHORUS Pellégrin.

Batrachocottus Berg, 109; orthotype COTTUS BAIKALENSIS Dybowski.

1929. BOULENGER (1903). *On the Fishes Collected by Mr. G. L. Bates in Southern Cameroon.* Proc. Zool. Soc. London, 1903, I, 21–29.

GEORGE ALBERT BOULENGER.

Microsynodontis Boulenger, 26; orthotype M. BATESII Boulenger.

1930. BOULENGER (1903). *Descriptions of Two New Deep-Sea Fishes from South Africa.* Rept. Govt. Biologist Cape of Good Hope, 66–68.

GEORGE ALBERT BOULENGER.

Tripterophycis Boulenger, 66; orthotype T. GILCHRISTI Boulenger.

1931. EIGENMANN (1903). *The Fresh-Water Fishes of Western Cuba.* Bull. U. S. Fish Comm. for 1902, 211–236 (1903).

CARL H. EIGENMANN.

Toxus Eigenmann, 226; orthotype T. RIDDLEI Eigenmann.

1932. EIGENMANN (1903). *New Genera of South American Fresh-Water Fishes and New Names for Old Genera.* Smithson. Collec. XLV, 114–148. (Dec. 19, 1903.)

CARL H. EIGENMANN.

Lahiliella Eigenmann, 144; orthotype Anastomus nasutus Kner.

Anisistia Eigenmann, 144; orthotype Anodus notatus Schomburgk.

Holoshesthes Eigenmann, 144; orthotype Chirodon pequira Steind. Later corrected to Holesthes, but the first spelling should apparently hold.

Moenkhausia Eigenmann, 145; orthotype Tetragonopterus xinguensis Steind.

Markiana Eigenmann, 145; orthotype Tetragonopterus nigripinnis Perugia.

Othonophanes Eigenmann, 145; orthotype Brycon labiatus Eigenmann. Misprinted Orthophanes in the Zoological Record; also misprinted as Orthonophanes.

Holoprion Eigenmann, 145; orthotype Chirodon agassizi Steind. A synonym of Aphyocharax Gthr.

Holopristis Eigenmann, 145; orthotype Tetragonopterus ocellifer Steind.

Stichonodon Eigenmann, 145; orthotype Luetkenia insignis Steind. Substitute for Luetkenia Steind., preoccupied.

Bryconodon Eigenmann, 146; orthotype Brycon orthotænia Gthr.

Acestrorhynchus Eigenmann, 146; orthotype Salmo falcatus Bloch. A substitute for Xiphorhynchus Ag. and Xiphorhamphus M. & T., both names preoccupied.

Acestrorhamphus Eigenmann, 146; orthotype Hydrocyon hepsetus Cuv.

Acestrocephalus Eigenmann, 146; orthotype Xiphorhamphus anomalus Steind.

Evermannella Eigenmann, 146; orthotype Cynopotamus biserialis Garman. Name preoccupied; replaced by Eucynopotamus Fowler, 1904.

Gilbertella Eigenmann, 147; orthotype Anacyrtus alatus Steind,, preoccupied by Waite, 1902; replaced by Gilbertolus Eigenmann & Ogle.

Myleocollops Eigenmann, 147; orthotype Metynnis goeldii Eigenmann.

Acnodon Eigenmann, 147; orthotype Myleus oligacanthus M. & T.

Boulengerella Eigenmann, 147; orthotype Xiphostoma lateristriga Boulenger.

Mylossoma Eigenmann, 148; orthotype Myletes albiscopus Cope.

Colossoma Eigenmann, 148; orthotype Myletes oculus Cope.

Orthomyleus Eigenmann, 148; orthotype Myletes ellipticus Gthr.

Piaractus Eigenmann, 148; orthotype Myletes brachypomus Cuv.

1933. EIGENMANN & KENNEDY (1903). *On a Collection of Fishes from Paraguay, with a Synopsis of the American Genera of Cichlids.* Proc. Acad. Nat. Sci. Phila., 1903, 497–537. (Sept. 4, 1903.)

Carl H. Eigenmann; Clarence Hamilton Kennedy.

Biotæcus Eigenmann & Kennedy, 533; orthotype Saraca opercularis Steind. A substitute for Saraca Steind., said to be preoccupied.

Biotodoma Eigenmann & Kennedy, 533; orthotype B. trifasciatus Eigenmann & Kennedy.

1934. FOWLER (1903). *Descriptions of Several Fishes from Zanzibar Island, Two of Which Are New.* Proc. Acad. Sci. Phila., LV, 161–176. (June 4, 1903.)

Henry Weed Fowler.

Graviceps Fowler, 170; orthotype Petroscirtes elegans Steind.

1935. FOWLER (1903). *New and Little Known Mugilidæ and Sphyrænidæ.* Proc Acad. Nat. Sci. Phila., 1903, 743–752. (Dec. 16, 1903.)

Henry Weed Fowler.

Œdalechilus Fowler, 748; orthotype Agonostoma monticola (Griffith).

Agriosphyræna Fowler, 749; orthotype Sphyræna barracuda Walbaum.

1936. FOWLER (1903). *Descriptions of New, Little Known, and Typical Atherinidæ.* Proc. Acad. Nat. Sci. Phila., 1903, 727-742. (Dec. 16, 1903.)

HENRY WEED FOWLER.

Atherinomorus Fowler, 730; orthotype ATHERINA LATICEPS Poey. A synonym of HEPSETIA Bon.

Ischnomembras Fowler, 730; orthotype I. GABUNENSIS Fowler. A synonym of MENIDIA Bon.

Phoxargyrea Fowler, 732; orthotype P. DAYI Fowler. Apparently a synonym of MENIDIA Bon.

1937. GILL (1903). *Note on the Fish Genera Named Macrodon.* Proc. U. S. Mus., XXVI, 1015-1016

THEODORE NICHOLAS GILL.

Hoplias Gill, 1016; orthotype MACRODON TAREIRA Müller. A substitute for MACRODON Müller, preoccupied.

1938. GILCHRIST (1903). *Descriptions of New South African Fishes.* Marine Invest. S. Africa, II, 203-211.

J. D. F. GILCHRIST.

Cyttosoma Gilchrist, 113; orthotype C. BOOPS Gilchrist.

Trachichthodes Gilchrist, 203; orthotype BERYX AFFINIS Gthr. Replaces AUSTROBERYX McCulloch.

Læmonemodus Gilchrist, 208; orthotype L. COMPRESSICAUDA Gilchrist.

Selachophidium Gilchrist, 209; orthotype S. GUENTHERI Gilchrist.

1939. HAY (1903). *On a Collection of Upper Cretaceous Fishes from the Mount Lebanon, Syria, with Descriptions of Four New Genera and Nineteen New Species.* Bull. Amer. Mus., XIX, 395-452.

OLIVER PERRY HAY.

Stenopropoma Hay, 407; orthotype S. HAMATA Hay (fossil) (BELONORHYNCHIDÆ).

Eubiodectes Hay, 415; orthotype CHIROCENTRITES LIBANICUS Pictet & Humbert (fossil).

Anguillavus Hay, 436; orthotype A. QUADRIPINNIS Hay (fossil eel).

Enchelion Hay, 441; orthotype E. MONTIUM Hay (fossil).

1940. HELLER & SNODGRASS (1903). *Papers from the Hopkins-Stanford Galapagos Expedition, 1898-1899. XV. New Fishes.* Proc. Washington Acad., V, 189-229.

EDMUND HELLER (1875-); ROBERT EVANS SNODGRASS (1875-).

Evolantia Heller & Snodgrass, 189; orthotype EXOCŒTUS MICROPTERUS Cuv. & Val.

Galeagra Heller & Snodgrass, 193; orthotype G. PAMMELAS Heller & Snodgrass.

Nexilosus Heller & Snodgrass, 204; orthotype N. ALBEMARLEUS Heller & Snodgras.

Petrotyx Heller & Snodgrass, 222; orthotype P. HOPKINSI Heller & Snodgrass.

Eutyx Heller & Snodgrass, 224; orthotype E. DIAGRAMMUS Heller & Snodgrass.

Allector Heller & Snodgrass, 228; orthotype A. CHELONIÆ Heller & Snodgrass.

1941. JAEKEL (1903). *Ueber die Epiphyse und Hypophyse.* SB. Ges. Naturf. Berlin, 1903, 27-58.

OTTO JAEKEL.

Pachyosteus Jaekel, 39; orthotype P. BULLA Jaekel (fossil).

1942. JAEKEL (1903). *Ueber Ramphodus . . . einen neuen devonischen Holocephalen von Wildungen.* Sitzb. Ges. Naturf. Freunde. Berlin, 383-393.

OTTO JAEKEL.

Ramphodus Jaekel, 383; orthotype .... Name preoccupied as RHAMPHODUS. A synonym of RHYNCHODUS.

1943. JENKINS (1903). *Report on the Collection of Fishes Made in the Hawaiian Islands, with Descriptions of New Species.* Bull. U. S. Fish Comm., XXII, for 1902, 415–516. (Sept. 23, 1903.)

OLIVER PEEBLES JENKINS.

Cirrhitoidea Jenkins, 489; orthotype C. BIMACULA Jenkins.

Chlamydes Jenkins, 503; orthotype C. LATICEPS Jenkins.

Eviota Jenkins, 542; orthotype E. EPIPHANES Jenkins.

1944. JORDAN (1903). *Supplementary Note on Bleekeria mitsukurii and on Certain Japanese Fishes.* Proc. U. S. Nat. Mus., XXVI, 693–696. (Apr. 9, 1903.)

DAVID STARR JORDAN.

Embolichthys Jordan, 693; orthotype BLEEKERIA MITSUKURII J. & E.

Zen Jordan, 694; orthotype CYTTOPSIS ITEA Jordan & Fowler.

Chasmichthys Jordan, 696; orthotype CHASMIAS MISAKIUS Jordan & Snyder. Substitute for SACCOSTOMA Sauvage and for CHASMIAS Jordan & Snyder, both names preoccupied.

1945. JORDAN (1903). *Generic Names of Fishes* (correspondence). Amer. Nat., XXXVII, 360.

DAVID STARR JORDAN.

Falcularius Jordan & Snyder, 360; orthotype FALCULA CHAPALÆ Jordan & Snyder. Name a substitute for FALCULA Jordan & Snyder, preoccupied.

Xeneretmus (Gilbert) Jordan, 360; orthotype XENOCHIRUS TRIACANTHUS Gilbert. Name a substitute for XENOCHIRUS Gilbert, preoccupied.

1946. JORDAN & EVERMANN (1903). *Descriptions of New Genera and Species of Fishes from the Hawaiian Islands.* Bull. U. S. Fish Comm. for 1902, XXII, 161–208. (Apr. 11, 1903.)

DAVID STARR JORDAN; BARTON WARREN EVERMANN.

Fowleria Jordan & Evermann, 180; orthotype APOGON AURITUS Blkr.

Bowersia Jordan & Evermann, 182; orthotype B. VIOLESCENS J. & E.

Verriculus Jordan & Evermann, 191; orthotype V. SANGUINEUS J. & E.

Quisquilius Jordan & Evermann, 203; orthotype Q. EUGENIUS J. & E.

Vitraria Jordan & Evermann, 205; orthotype V. CLARESCENS J. & E.

Osurus Jordan & Evermann, 206; orthotype PARAPERCIS SCHAUINSLANDI Steind.

1947. JORDAN & EVERMANN (1903). *Description of a New Genus and Two New Species of Fishes from the Hawaiian Islands.* Bull. U. S. Fish Comm., XXII, for 1902, 209–210. (April 11, 1903.)

DAVID STARR JORDAN; BARTON WARREN EVERMANN.

Iracundus Jordan & Evermann, 209; orthotype I. SIGNIFER J. & E.

1948. JORDAN & FOWLER (1903). *A Review of the Elasmobranchiate Fishes of Japan.* Proc. U. S. Nat. Mus., XXVI, 593–674. (March 30, 1903.)

DAVID STARR JORDAN; HENRY WEED FOWLER.

Zameus Jordan & Fowler, 632; orthotype CENTROPHORUS SQUAMULOSUS Gthr. A synonym of SCYMNODON Bocage & Capello.

1949. JORDAN & FOWLER (1903). *A Review of the Cobitidæ, or Loaches, of the Rivers of Japan.* Proc. U. S. Nat. Mus., XXVI, 765–774. (April 3, 1903.)

DAVID STARR JORDAN; HENRY WEED FOWLER.

Elxis Jordan & Fowler, 768; orthotype E. NIKKONIS Jordan & Fowler. A synonym of LEFUA Herzenstein.

Orthrias Jordan & Fowler, 769; orthotype O. OREAS Jordan & Fowler. A synonym of OREIAS Sauvage and probably also of BARBATULA Linck.

1950. JORDAN & FOWLER (1903). *A Review of the Dragonets (Callionymidæ) and Related Fishes of the Waters of Japan.* Proc. U. S. Nat. Mus., XXV, 939–959. (May 3, 1903.)

DAVID STARR JORDAN; HENRY WEED FOWLER.

Draconetta Jordan & Fowler, 939; orthotype D. XENICA Jordan & Fowler.

Calliurichthys Jordan & Fowler, 941; orthotype CALLIONYMUS JAPONICUS Houttuyn.

1951. JORDAN & FOWLER (1903). *A Review of the Cyprinoid Fishes of Japan.* Proc. U. S. Nat. Mus., XXVI, 811–862. (July 6, 1903.)

DAVID STARR JORDAN; HENRY WEED FOWLER.

Abbottina Jordan & Fowler, 835; orthotype A. PSEGMA Jordan & Fowler.

Zezera Jordan & Fowler, 837; orthotype SARCOCHILICHTHYS HILGENDORFI Ishikawa.

Biwia Jordan & Fowler, 838; orthotype PSEUDOGOBIO ZEZERA Ishikawa.

1952. JORDAN & FOWLER (1903). *A Review of the Siluroid Fishes, or Catfishes of Japan.* Proc. U. S. Nat. Mus., XXVI, 897–911. (July 7, 1903.)

DAVID STARR JORDAN; HENRY WEED FOWLER.

Fluvidraco Jordan & Fowler, 904; orthotype PSEUDOBAGRUS RANSONNETI Steind.

1953. LAHILLE (1903). *Nota sobre un genera nuevo de Escombrido.* An. Mus. Buenos Aires (3), II, 1903, 375–376.

FERNANDO LAHILLE.

Chenogaster Lahille, 375; orthotype C. HOLMBERGI Lahille.

1954. REGAN (1903). *On a Collection of Fishes Made by Dr. Goeldi at Rio Janeiro.* Proc. Zool. Soc. London, 1903, 59–68.

CHARLES TATE REGAN.

Mylacrodon Regan, 62; orthotype M. GOELDII Regan.

1955. REGAN (1903). *A Revision of the Fishes of the Family Lophiidæ.* Ann. Mag. Nat. Hist., XI.

CHARLES TATE REGAN.

Chirolophius Regan, 279; orthotype LOPHIUS NARESI Gthr. A synonym of LOPHIODES G. & B. (1895).

1956. REGAN (1903). *On the Systematic Position and Classification of the Gadoid or Anacanthine Fishes.* Ann. Mag. Nat. Hist. (7), XI, 459–466.

CHARLES TATE REGAN.

Gadomus Regan, 459; orthotype BATHYGADUS LONGIFILIS G. & B.

Melanobranchus Regan, 459; orthotype BATHYGADUS MELANOBRANCHUS Vaillant.

1957. REGAN (1903). *On the Genus Lichia of Cuvier.* Ann. Mag. Nat. Hist. (7), XII, 348–350.

CHARLES TATE REGAN.

Campogramma Regan, 350; orthotype LICHIA VADIGO Risso. A synonym of HYPACANTHUS Raf.

1958. REGAN (1903). *On a Collection of Fishes from the Azores.* Ann. Mag. Nat. Hist., XII.

CHARLES TATE REGAN.

Macristium Regan. 345; orthotype M. CHAVESI Regan.

1959. REGAN (1903). *Descriptions de poissons nouveaux . . . Musée d'Histoire Naturelle de Génève.* Revue Suisse Zool. Génève.

CHARLES TATE REGAN.

Bedotia Regan, 416; orthotype B. MADAGASCARIENSIS Regan.

1960. RIBEIRO (1903). *Pescados do "Annie."* Bol. Soc. Nat. Agric. Rio de Janeiro.

ALIPIO DE MIRANDA RIBEIRO.

Pseudopercis Ribeiro, 4; orthotype P. NUMIDA Ribeiro.

1961. SAUVAGE (1903). *Noticia sobre los Peces de la Caliza litografica de la Provincia de Lerida (Cataluña).* Mem. Ac. Barcel. (3), IV, No. 35, 1–32.

HENRI EMILE SAUVAGE.

Vidalia Sauvage, 15; orthotype V. CATALUNICA Sauvage (fossil).

1962. SCHMIDT (1903). *Faune de la Mer Ochotsk et du Japon.*

PETR YULIEVICH SCHMIDT.

Cynopsetta Schmidt, 19; orthotype C. DUBIA Schmidt, name only; defined by Jordan & Starks, 1906.

1963. STEINDACHNER (1903). *Ueber einige neue Reptilien und Fischarten des Hofmuseums in Wien.* Sitzb. Ak. Wien, CXII, 15–21.

FRANZ STEINDACHNER.

Gymnocharacinus Steindachner, 20; orthotype G. BERGII Steind.

1964. TRAQUAIR (1903). *The Lower Devonian Fishes of Gemünden.* Trans. Roy. Soc. Edinb., XL, 723–739.

RAMSAY HEATLEY TRAQUAIR.

Gemundina Traquair, 734; orthotype G. STURTZI Traquair (fossil).
Hunsruckia Traquair, 736; orthotype H. PROBLEMATICA Traquair (fossil).

1965. VOLZ (1903). *Fische von Sumatra.* Zool. Anz., XXVI, 553–559.

WALTER VOLZ.

Trypauchenopsis Volz, 555; orthotype T. INTERMEDIUS Volz.

1966. WAITE (1903). *New Records of Recurrences of Rare Fishes from Eastern Australia.* Rec. Austr. Mus., V, 56–61.

EDGAR RAVENSWOOD WAITE.

Prosoplismus Waite, 59; orthotype HISTIOPTERUS RECURVIROSTRIS Rich. A synonym of PENTACEROPSIS Steindachner & Döderlein, noted by Waite, Ann. Mag. Nat. Hist., XII, 288.

1904.

1967. BOULENGER (1904). *Description of New West African Fresh-Water Fishes.* Ann. Mag. Nat. Hist. (7), XIV, 16–20.

GEORGE ALBERT BOULENGER.

Procatopus Boulenger, 20; orthotype P. NOTOTÆNIA Boulenger.

1968. DEAN (1904). *Notes on Japanese Myxinoids. A New Genus Paramyxine and a New Species Homea okinoseana.* Journ. Coll. Sci. Tokyo, XIX, No. 2, 1–23.

BASHFORD DEAN (1867–).

Paramyxine Dean, 14; orthotype P. ATAMI Dean.

1969. DOLLO (1904). *Résultats du voyage du S. Y. Belgica. Expédition Antarctique Belge.* Anvers.

Louis Dollo.

Copeichthys Dollo, 159; orthotype Diplomystus dentatus Cope (fossil). Substitute for Diplomystus Cope (1877), regarded as preoccupied by Diplomystes Gthr. (1864).

1970. EASTMAN (1904). *Description of Bolca Fishes.* Bull. Mus. Comp. Zool. Harvard, XLVI, 1–36.

Charles Rochester Eastman.

Histionotopterus Eastman, 32; orthotype Histiocephalus bassani Zigno (fossil, Monte Bolca). A substitute for Histiocephalus Zigno, preoccupied in worms.

1971. FOWLER (1904). *Description of a New Lantern Fish.* Proc. Acad. Nat. Sci. Phila. for 1903, 754–755. (Jan. 15, 1904.)

Henry Weed Fowler.

Centrobranchus Fowler, 754; orthotype C. chœrocephalus Fowler.

1972. FOWLER (1904). *Note on the Characinidæ.* Proc. Ac. Nat. Sci. Phila., LIII. (Jan., 1904.)

Henry Weed Fowler.

Eucynopotamus Fowler, 119; orthotype Cynopotamus biserialis Garman. A substitute for Evermannella Eigenmann, preoccupied by Evermanella Fowler, 1901.

1973. FOWLER (1904). *New, Little Known, and Typical Berycoid Fishes.* Proc. Acad. Nat. Sci. Phila., LV, 222–238. (Apr. 7, 1904.)

Henry Weed Fowler.

Sargocentron Fowler, 235; orthotype Holocentrum leo Cuv.

1974. FOWLER (1904). *Notes on Fishes from Arkansas, Indian Territory, and Texas.* Proc. Acad. Nat. Sci. Phila., LV, 242–249.

Henry Weed Fowler.

Paranotropis Fowler, 245; orthotype Photogenis scabriceps Cope. A substitute for Episema Cope & Jordan, preoccupied.

1975. FOWLER (1904). *A Collection of Fishes from Sumatra.* Journ. Ac. Nat. Sci. Phila.

Henry Weed Fowler.

Rastrum Fowler, 509; orthotype Alepes scitula Fowler.

Boulengerina Fowler, 512; orthotype Dules tæniurus Cuv. & Val. Name preoccupied in snakes, Dollo, 1886; replaced by Safole Jordan, 1912.

Equulites Fowler, 513; orthotype Leiognathus vermiculatus Fowler.

Eubleekeria Fowler, 516; orthotype Equula splendens Cuv.

Deveximentum Fowler, 517; orthotype Zeus insidiator Bloch. A synonym of Secutor Gistel.

Æthaloperca Fowler, 522; orthotype Perca rogaa Forskål.

Bennettia Fowler, 524; orthotype Anthias johni Bloch.

Parkia Fowler, 525; orthotype Lutjanus furvicaudatus Fowler.

Anemura Fowler, 527; orthotype Dentex notatus Day.

Odontoglyphis Fowler, 527; orthotype Dentex tolu Fowler.

Euthyopteroma Fowler, 527; orthotype Dentex blochi Blkr. (= Sparus japonicus Bloch).

Eutherapon Fowler, 527; orthotype Therapon theraps Cuv.
Euelatichthys Fowler, 527; orthotype Diagramma affine Gthr.
Spilótichthys Fowler, 528; orthotype Holocentrus radjabau Lac.
Lethrinella Fowler, 529; orthotype Sparus miniatus Fowler.
Pertica Fowler, 530; orthotype Gerres filamentosus Cuv. & Val. A synonym of Gerres Cuv. (Xystæma J. & E.), as restricted.
Actinicola Fowler, 533; orthotype Lutjanus percula Lac.
Octocynodon Fowler, 535; orthotype Julius miniatus Cuv. & Val.
Grammoplites Fowler, 550; orthotype Cottus scaber L.

1976. GILBERT & STARKS (1904). *The Fishes of Panama Bay.* Mem. Calif. Ac., IV, 1–304.
Charles Henry Gilbert; Edwin Chapin Starks.
Guentheridia Gilbert & Starks, 158; orthotype Tetraodon formosus Gthr.

1977. GILCHRIST (1904). *Descriptions of New South African Fishes.* Mar. Invest. S. Africa, III, 1–16.
J. D. F. Gilchrist.
Cyttosoma Gilchrist, 6; orthotype C. boops Gilchrist.

1978. GILL (1904). *Extinct Pediculate and Other Fishes.* Science (2), XX, 845–846.
Theodore Nicholas Gill.
Bradyurus Gill, 846; orthotype Symphodus szajnochæ Zigno (fossil).

1979. HILGENDORF (1904). *Ein neuer Scyllium artiger Haifisch. Proscyllium habereri, . . . von Formosa.* Sitzber. Ges. Naturf. Berlin, 1904, 39–41.
Franz Martin Hilgendorf.
Proscyllium Hilgendorf, 39; orthotype P. habereri Hilgendorf.

1980. JORDAN (1904). *Notes on Fishes Collected in the Tortugas Archipelago.* Bull. U. S. Fish. Comm., XXII, 539–544.
David Starr Jordan.
Elacatinus Jordan, 542; orthotype E. oceanops Jordan.
Acteis Jordan, 543; orthotype Malococtenus moorei Evermann & Marsh.
Ericteis Jordan, 543; orthotype E. kalisheræ Jordan.

1981. JORDAN & SNYDER (1904). *Notes on the Collection of Fishes from Oahu Island and Laysan Island, Hawaii, with Descriptions of Four New Species.* Proc. U. S. Nat. Mus., XXVII, 939–948. (June 2, 1904.)
David Starr Jordan; John Otterbein Snyder.
Ariomma Jordan & Snyder, 942; orthotype A. lurida Jordan & Snyder.

1982. JORDAN & SNYDER (1904). *On a Collection of Fishes Made by Mr. Alan Owston in the Deep Waters of Japan.* Smithson. Collect., I, 230–240.
David Starr Jordan; John Otterbein Snyder.
Trismegistus Jordan & Snyder, 238; orthotype T. owstoni Jordan & Snyder. A giant Liparis.

1983. JORDAN & STARKS (1904). *List of Fishes Dredged by the Steamer "Albatross" off the Coast of Japan in the Summer of 1900, with Descriptions of New Species and a Review of the Japanese Macrourida* (by Jordan & Gilbert). Bull. U. S. Fish Comm., XXII, 577–630.
David Starr Jordan; Edwin Chapin Starks.

Osopsaron Jordan & Starks, 600; orthotype PTEROPSARON VERECUNDUM Jordan & Snyder.

Regania Jordan & Gilbert, 604; orthotype R. NIPPONICA J. & G.

Nezumia Jordan & Gilbert, 620; orthotype N. CONDYLURA J. & G.

Cleisthenes Jordan & Starks, 622; orthotype C. PINETORUM Jordan & Starks.

Alæops Jordan & Starks, 623; orthotype A. PLINTHUS Jordan & Starks.

Dexistes Jordan & Starks, 624; orthotype D. RIKUZENIUS Jordan & Starks.

Araias Jordan & Starks, 624; orthotype A. ARIOMMUS Jordan & Starks, the young of DEXISTES RIKUZENIUS Jordan & Starks. A synonym of DEXISTES Jordan & Starks.

Veræqua Jordan & Starks, 625; orthotype V. ACHNE Jordan & Starks.

1984. JORDAN & STARKS (1904). *A Review of the Scorpænoid Fishes of Japan.* Proc. U. S. Nat. Mus., XXVII, 91–175. (Jan. 22, 1904.)

DAVID STARR JORDAN; EDWIN CHAPIN STARKS.

Thysanichthys Jordan & Starks, 122; orthotype T. CROSSOTUS Jordan & Starks.

Sebastiscus Jordan & Starks, 124; orthotype SEBASTES MARMORATUS Cuv. & Val.

Lythrichthys Jordan & Starks, 140; orthotype L. EULABES Jordan & Starks.

Ebosia Jordan & Starks, 145; orthotype PTEROIS BLEEKERI Steind.

Decterias Jordan & Starks, 154; orthotype MINOUS PUSILLUS T. & S.

Erosa (Swainson) Jordan & Starks, 156; orthotype SYNANCEIA EROSA (Langsdorf) Cuv. & Val.

Inimicus Jordan & Starks, 158; orthotype PELOR JAPONICUM Cuv. & Val. A substitute for PELOR Cuv., preoccupied.

Ocosia Jordan & Starks, 162; orthotype O. VESPA Jordan & Starks.

Erisphex Jordan & Starks, 170; orthotype COCOTROPUS POTTII Steind.

1985. JORDAN & STARKS (1904). *A Review of the Cottidæ or Sculpins of the Waters of Japan.* Proc. U. S. Nat. Mus., XXVII, 231–335. (Jan. 28, 1904.)

DAVID STARR JORDAN; EDWIN CHAPIN STARKS.

Stlengis Jordan & Starks, 236; orthotype S. OSENSIS Jordan & Starks.

Schmidtia Jordan & Starks, 237; orthotype S. MISAKIA Jordan & Starks. Name preoccupied and changed to SCHMIDTINA, p. 961.

Daruma Jordan & Starks, 241; orthotype D. SAGAMIA Jordan & Starks.

Ricuzenius Jordan & Starks, 242; orthotype R. PINETORUM Jordan & Starks.

Rheopresbe Jordan & Starks, 270; orthotype R. FUJIYAMÆ Jordan & Starks.

Ainocottus Jordan & Starks, 283; orthotype A. ENSIGER Jordan & Starks.

Crossias Jordan & Starks, 296; orthotype C. ALLISI Jordan & Starks.

Cottiusculus (Schmidt) Jordan & Starks, 298; orthotype C. GONEZ Schmidt.

Elaphichthys Jordan & Starks, 301; orthotype CENTRIDERMICHTHYS ELONGATUS Steind.

Alcichthys Jordan & Starks, 301; orthotype CENTRIDERMICHTHYS ALCICORNIS Herzenstein.

Furcina Jordan & Starks, 303; orthotype F. ISHIKAWÆ Jordan & Starks.

Ocynectes Jordan & Starks, 306; orthotype O. MASCHALIS Jordan & Starks.

Bero Jordan & Starks, 317; orthotype CENTRIDERMICHTHYS ELEGANS Steind.

Vellitor Jordan & Starks, 318; orthotype PODABRUS CENTROPOMUS Rich. Substitute for PODABRUS Rich., preoccupied.

1986. JORDAN & STARKS (1904). *Schmidtina, a New Genus of Japanese Sculpins.* Proc. U. S. Nat. Mus. (June 27, 1904).

DAVID STARR JORDAN; EDWIN CHAPIN STARKS.

Schmidtina Jordan & Starks, 961; orthotype SCHMIDTIA MISAKIA Jordan & Starks. Substitute for SCHMIDTIA Jordan & Starks, preoccupied.

1987. MEEK (1904). *The Fresh-Water Fishes of Mexico North of the Isthmus of Tehuantepec.* Field Mus. Zool., V, 1–252.

SETH EUGENE MEEK (1858–1912).

Cynodonichthys Meek, 101; orthotype C. TENUIS Meek.

Paragambusia Meek, 133; orthotype GAMBUSIA NICARAGUENSIS Gthr.

Thorichthys Meek, 222; orthotype T. ELLIOTI Meek.

1988. NIKOLSKII (1904). *Neue Fischarten aus Ostasien.* Ann. Mus. Zool. Acad. St. Petersburg, VIII.

ALEKSANDR MIKHAILOVICH NIKOLSKII.

Ussuria Nikolskii, 362; orthotype U. LEPTOCEPHALA Nikolskii. Apparently a synonym of MISGURNUS Lac.

1989. OGILBY (1904). *Studies in the Ichthyology of Queensland.* Proc. Roy. Soc. Queensland, XVIII, 27–30.

JAMES DOUGLAS OGILBY.

Daia Ogilby, 9; orthotype CENTROPOGON INDICUS Day. Perhaps a synonym of HYPODYTES Gistel (PARACENTROPOGON Blkr.).

Notesthes Ogilby, 17; orthotype CENTROPOGON ROBUSTUS Gthr.

Liocranium Ogilby, 23; orthotype L. PRÆPOSITUM Ogilby.

1990. PELLÉGRIN (1904). *Contribution à l'étude anatomique, biologique et taxonomique des Poissons de la famille des Cichlidés.* Mem. Soc. Zool. France, XVI, 41–402.

JACQUES PELLÉGRIN.

Astatheros Pellégrin, 203; orthotype HEROS HETERODONTUS Vaillant & Pellégrin.

Astatoreochromis Pellégrin, 384; orthotype A. ALLUAUDI Pellégrin.

Nanochromis Pellégrin, 273; orthotype PSEUDOPLESIOPS NUDICEPS Boulenger, Substitute for PSEUDOPLESIOPS Boulenger, preoccupied.

Lepidolamprologus Pellégrin, 295; orthotype LAMPROLOGUS ELONGATUS Boulenger.

Astatotilapia Pellégrin, 299; orthotype TILAPIA DESFONTAINESI Lac.

Boulengerochromis Pellégrin, 304; orthotype TILAPIA MICROLEPIS Boulenger.

Ophthalmotilapia Pellégrin, 345; orthotype TILAPIA BOOPS Boulenger.

1991. POPTA (1904). *Descriptions préliminaires des nouvelles espèces de Poissons recueillies au Borneo central par M. le Dr. A. W. Nieuwenhuis en 1898 et en 1900.* Notes Leyden Mus., XXIV, 179–202.

CANNA M. L. POPTA.

Neopangasius Popta, 180; orthotype N. NIEUWENHUISII Popta.

Paracrossocheilus Popta, 200; orthotype P. BICORNIS Popta.

1992. REGAN (1904). *A Monograph of the Fishes of the Family Loricariidæ.* Trans. Zool. Soc. London, XVII, 191–350.

CHARLES TATE REGAN.

Xenocara Regan, 251; orthotype CHÆTOSTOMUS LATIFRONS Gthr.

1993. ROMANOVSKII (1904). *Notiz ueber den fossilen Fisch, Lyrolepis caucasicus.* Rom. Verh. Russ. Miner. Ges. St. Petersb.

GHENNADI DANILOVICH ROMANOVSKII.

Lyrolepis Romanovskii, 1; orthotype L. CAUCASICUS Romanovskii (fossil).

1994. RUTTER (1904). *Notes on Fishes of Gulf of California, with Description of a New Genus and Species.* Proc. Calif. Acad. Zool. (3), III, 251–253.

CLOUDSLEY M. RUTTER.

Pycnomma Rutter, 252; orthotype P. SEMISQUAMATA Rutter.

1995. SCHMIDT (1904). *Pisces marium orientalium imperii rossici.* St. Petersburg, 1904, 1–466.

PETR YULIEVICH SCHMIDT.

Cottiusculus Schmidt, 190; orthotype C. GONEZ Schmidt. First notice by Jordan & Starks, 1904.

Tilesina Schmidt, 134; orthotype T. GIBBOSA Schmidt.

Krusensterniella Schmidt, 198; orthotype K. NOTABILIS Schmidt.

Hadropareia Schmidt, 205; orthotype H. MIDDENDORFFI Schmidt.

Protopsetta Schmidt, 230; orthotype HIPPOGLOSSOIDES HERZENSTEINI Schmidt.

Acanthopsetta Schmidt, 237; orthotype A. NADESHNYI Schmidt.

1996. SIMIONESCU (1904). *Vorläufige Mitteilung über eine eligocäne Fischfauna aus den rumanischen Karpathen.* Verh. Geol. Reichsant, 1904, 147–149.

JOAN THEODOR SIMIONESCU.

Krambergeria Simionescu, 148; orthotype K. LANCEOLATA Simionescu (fossil).

1997. SMITH (1904). *A New Cottoid Fish from Bering Sea.* P. Soc. Wash., XVII, 163–164.

HUGH MCCORMICK SMITH.

Thecopterus Smith, 163; orthotype T. ALEUTICUS Smith.

1998. SNYDER (1904). *A Catalogue of the Shore Fishes Collected by the Steamer "Albatross" about the Hawaiian Islands in 1902.* Bull. U. S. Fish Comm., XXII, 513–538.

JOHN OTTERBEIN SNYDER.

Veternio Snyder, 516; orthotype V. VERRENS Snyder.

Collybus Snyder, 525; orthotype C. DRACHME Snyder.

Merinthe Snyder, 535; orthotype SEBASTES MACROCEPHALUS Sauvage.

1999. STROMER (1904). *Nematognathi aus dem Fajum und dem Natronthale in Aegypten.* N. Jahrb. Min., 1904, I, 1–17.

ERNST STROMER VON REICHENBACH (1871–).

Fajumia Stromer, 3; orthotype F. SCHWEINFURTHI Stromer (fossil).

Socnopæa Stromer, 6; orthotype S. GRANDIS Stromer (fossil).

2000. VAILLANT (1904). *Quelques Reptiles, Batraciens et Poissons du Haut Tonquin.* Bull. Mus. Paris, 1904, 297–301.

LÉON VAILLANT.

Luciocyprinus Vaillant, 299; orthotype L. LANGSONI Vaillant.

2001. WAITE (1904). *Additions to the Fish Fauna of Lord Howe Island. No.4.* Rec. Austral. Mus., V, 135–186.

EDGAR RAVENSWOOD WAITE.

Xenogramma Waite, 157; orthotype X. CARINATUM Waite.

Allogobius Waite, 176; orthotype A. VIRIDIS Waite. A synonym of EVIOTA Jenkins.

Limnichthys Waite, 178; orthotype L. FASCIATUS Waite.

Lepadichthys Waite, 180; orthotype L. FRENATUS Waite.

Schizochirus Waite, 243; orthotype S. INSOLENS Waite.

1905.

2002. ANTIPA (1905). *Clupeinen des Westlichen Teiles des Schwarzen Meeres und der Donaumündungen.* Denkschr. Akad. Wiss. Wien, LXVIII.

GREGOR ANTIPA.

Sardina Antipa, 54; orthotype CLUPEA PILCHARDUS L. A synonym of SARDINIA Poey, the two names equally similar to the earlier SARDINIUS Von der Marck, a fossil sardine-like fish. For the genus typified by CLUPEA PILCHARDUS the name CLUPANODON Lac. has been used, but according to the present rules of nomenclature that name must stand for the Asiatic genus, KONOSIRUS.

2003. See Additions and Corrections, page 575.

2004. EASTMAN (1905). *Les types de poissons fossiles du Monte Bolca au Museum d'Histoire Naturelle de Paris.* Mem. Soc. Geol. Paris, XIII.

CHARLES ROCHESTER EASTMAN.

Eomyrus (Agassiz) Eastman, 15; logotype E. FORMOSISSIMUS Ag. (Ms.).

2005. EIGENMANN & WARD (1905). *The Gymnotidæ.* Proc. Wash. Ac., 1905, VII, 159–188.

CARL H. EIGENMANN; D. P. WARD.

Sternarchella Eigenmann & Ward, 163; orthotype STERNARCHUS SCHOTTI Steind.

Sternarchorhamphus Eigenmann & Ward, 165; logotype STERNARCHUS MULLERI Steind.

Sternarchogiton Eigenmann & Ward, 165; orthotype STERNARCHUS NATTERERI Steind.

2006. FORBES & RICHARDSON (1905). *On a New Shovelnose Sturgeon from the Mississippi River.* Bull. Illinois Lab., VII, 1905, 37–44.

STEPHEN ALFRED FORBES; ROBERT EARL RICHARDSON.

Parascaphirhynchus Forbes & Richardson, 37; orthotype P. ALBUS Forbes & Richardson.

2007. FOWLER (1905). *New, Rare, or Little Known Scombroids, I.* Proc. Acad. Nat. Sci. Phila., LVI, for 1904, 757–771. (Jan. 16, 1905.)

HENRY WEED FOWLER.

Sierra Fowler, 766; orthotype CYBIUM CAVALLA Cuv. A subgenus under SCOMBEROMORUS Lac.

Lepturacanthus Fowler, 770; orthotype TRICHIURUS SAVALA Cuv.

2008. FOWLER (1905). *New, Rare, or Little Known Scombroids, II.* Proc. Acad. Nat. Sci. Phila., LXII, 56–88. (Mar. 31, 1905.)

HENRY WEED FOWLER.

Rhaphiolepis Fowler, 59; orthotype CHORINEMUS TOL Cuv.

Vexillicaranx Fowler, 76; orthotype CARANX AFRICANUS Steind.

Elaphotoxon Fowler, 76; orthotype SCOMBER RUBER Bloch.

2009. FOWLER (1905). *Some Fishes from Borneo.* Proc. Acad. Nat. Sci. Phila., LVII, 455–523. (Aug. 14, 1905.)

HENRY WEED FOWLER.

Pristiopsis Fowler, 459; orthotype PRISTIS PERROTTETI Muller & Henle (lower caudal lobe developed).

Apodoglanis Fowler, 463; orthotype A. FURNESSI Fowler.

Vaillantella Fowler, 474; orthotype NEMACHEILUS EUEPIPTERUS Vaillant.

Homalopteroides Fowler, 476; orthotype HOMALOPTERA WASSINKII Blkr.
Labidorhamphus Fowler, 493; orthotype HEMIRHAMPHUS AMBLYURUS Blkr.
Pampus (Bonaparte) Fowler, 499; orthotype STROMATEUS CINEREUS Bloch. Forgotten name revived; replaces STROMATEOIDES Blkr.
Gigantogobius Fowler, 511; orthotype G. JORDANI Fowler.

2010. GILBERT (1905). *Aquatic Resources of the Hawaiian Islands. II. The Deep-Sea Fishes.* Bull. U. S. Fish Comm. for 1903, (Aug. 5, 1905.)
CHARLES HENRY GILBERT.

Metopomycter Gilbert, 585; orthotype M. DENTICULATUS Gilbert.
Stemonidium Gilbert, 586; orthotype S. HYPOMELAS Gilbert.
Nematoprora Gilbert, 587; orthotype N. POLYGONIFERA Gilbert.
Leptostomias Gilbert, 606; orthotype L. MACRONEMA Gilbert.
Lestidium Gilbert, 607; orthotype N. NUDUM Gilbert.
Hynnodus Gilbert, 617; orthotype H. ATHERINOIDES Gilbert.
Grammatonotus Gilbert, 618; orthotype G. LAYSANUS Gilbert.
Stethopristes Gilbert, 622; orthotype S. EOS Gilbert.
Cyttomimus Gilbert, 623; orthotype C. STELGIS Gilbert.
Peloropsis Gilbert, 630; orthotype O. XENOPS Gilbert.
Plectrogenium Gilbert, 634; orthotype P. NANUM Gilbert.
Snyderidia Gilbert, 634; orthotype S. CANINA Gilbert.
Bembradium Gilbert, 637; orthotype B. ROSEUM Gilbert.
Chrionema Gilbert, 645; orthotype C. CHRYSERES Gilbert.
Jordanicus Gilbert, 656; orthotype FIERASPER UMBRATILIS J. & E.
Tæniopsetta Gilbert, 680; orthotype T. RADULA Gilbert.
Samariscus Gilbert, 682; orthotype S. CORALLINUS Gilbert.
Miopsaras Gilbert, 694; orthotype M. MYOPS Gilbert.

2011. GILBERT & THOMPSON (1905). *Notes on the Fishes of Puget Sound.* Proc. U. S. Nat. Mus., XXVIII, 973–987. (Aug. 8, 1905.)
CHARLES HENRY GILBERT; JOSEPH C. THOMPSON.

Stelgidonotus Gilbert & Thompson, 977; orthotype S. LATIFRONS Gilbert & Thompson.

2012. GILL (1905). *The Scorpænoid Fish, Neosebastes entaxis, as the Type of a Distinct Genus.* Proc. U. S. Nat. Mus. (February 15, 1905.)
THEODORE NICHOLAS GILL.

Sebastosemus Gill, 219; orthotype NEOSEBASTES ENTAXIS Jordan & Snyder.

2013. GILL (1905). *Notes on the Genera of Synanceine and Pelorine Fishes.* Proc. U. S. Nat. Mus., XXVIII, 221-225. (Feb. 23, 1905.)
THEODORE NICHOLAS GILL.

Simopias Gill, 224; orthotype PELOR FILAMENTOSUS Cuv. & Val. A substitute for PELOR Cuv., based on a section of the genus distinct from the type of INIMICUS Jordan & Starks.
Rhinopias Gill, 225; orthotype SCORPÆNA FRONDOSA Gthr.

2014. GILL (1905). *On the Generic Characters of Prionotus Stearnsi.* Proc. U. S. Nat. Mus. (February 15, 1905.)
THEODORE NICHOLAS GILL.

Colotrigla Gill. 339; orthotype PRIONOTUS STEARNSI Jordan & Swain.
Fissala Gill, 342; orthotype PRIONOTUS ALATUS G. & B.

2015. GILL (date not ascertained). *Mancopsetta.*

Mancopsetta Gill, —; orthotype LEPIDOPSETTA MACULATA Gthr.; substitute for LEPIDOPSETTA Gthr., preoccupied. (I am unable to place this genus.)

2016. GILL & SMITH (1905). *A New Family of Jugular Acanthopterygians (Caristiidæ).* Proc. Biol. Soc. Wash., XVIII.

THEODORE GILL; HUGH MCCORMICK SMITH.

Caristius Gill & Smith, 249; orthotype C. JAPONICUS Gill & Smith.

2017. HAUG (1905). *Documents scientifiques de la mission saharienne Paleontologique (Mission Foureau Lamy).* Paris, fasc. 3, 1905, 751–832.

EMILE HAUG.

Platyspondylus Haug, 751; orthotype P. FOUREAUI Haug (fossil).

2018. JORDAN & EVERMANN (1905). *The Aquatic Resources of the Hawaiian Islands. I. The Shore Fishes.* Bull. U. S. Fish Comm. for 1903. (July 29, 1905.)

DAVID STARR JORDAN; BARTON WARREN EVERMANN.

Kelloggella (Jordan & Seale) Jordan & Evermann, 488; orthotype K. CARDINALIS Jordan & Seale. More fully defined later in *Fishes of Samoa.*

Exallias Jordan & Evermann, 503; orthotype SALARIAS BREVIS Kner.

2019. JORDAN & SEALE (1905). *List of Fishes Collected by Dr. Bashford Dean on the Island of Negros, Philippines.* Proc. U. S. Nat. Mus., XXVIII, 769–803.

DAVID STARR JORDAN; ALVIN SEALE.

Eleria Jordan & Seale, 774; orthotype E. PHILIPPINA Jordan & Seale.

Foa Jordan & Seale, 779; orthotype F. FO Jordan & Seale.

Drombus Jordan & Seale, 797; orthotype D. PALACKYI Jordan & Seale.

2020. JORDAN & STARKS (1905). *On a Collection of Fishes Made in Korea, by Pierre Louis Jouy, with Descriptions of New Species.* Proc. U. S. Nat. Mus., XXVIII, 193–211. (February 23, 1905.)

DAVID STARR JORDAN; EDWIN CHAPIN STARKS.

Longurio Jordan & Starks, 196; orthotype L. ATHYMIUS Jordan & Starks. A synonym of SAUROGOBIO Blkr.

Fusania Jordan & Starks, 198; orthotype F. ENSARCA Jordan & Starks. A synonym of APHYOCYPRIS Gthr.

Coreius Jordan & Starks, 199; orthotype LABEO CETOPSIS Kner.

Larimichthys Jordan & Starks, 204; orthotype L. RATHBUNÆ Jordan & Starks.

2021. JORDAN & THOMPSON (1905). *The Fish Fauna of the Tortugas Archipelago.* Bull. Bur. Fish, XXIV, 231–266.

DAVID STARR JORDAN; JOSEPH C. THOMPSON.

Etelides Jordan & Thompson, 241; orthotype ETELIS AQUILIONARIS G. & B.

Execestides Jordan & Thompson, 253; orthotype E. EGREGIUS Jordan & Thompson.

2022. KRAMBERGER (1905). *Die obertriadische Fischfauna von Hallein in Salzberg.* Bietr. Pal. Pesterr-Ung., XVIII, 193–224.

DRAGUTIN GORJANOVIC KRAMBERGER.

Spaniolepis Kramberger, 216; orthotype S. OVALIS Kramberger (fossil).

2023. LERICHE (1905). *Les poissons éocènes de la Belgique.* Mem. Mus. Belgique Bruxelles, III, 1905, 228.

MAURICE LERICHE.

Cristigorina Leriche, 80; orthotype C. CRASSA Leriche (fossil).

Glyptorhynchus Leriche, 159; orthotype CŒLORHYNCHUS RECTUS Ag. (fossil). Substitute for CŒLORHYNCHUS Ag., preoccupied. A synonym of CYLINDRACANTHUS Leidy, 1856.

2024. LÖNNBERG (1905). *The Fishes of the Swedish South Pole Expedition.* Wissensch. Ergeb. Schwed. Sudpolar-Exp., 5, Lief. 6, 1906, 1–69.

AXEL JOHAN EINAR LÖNNBERG.

Artedidraco Lönnberg, 39; orthotype A. MIRUS Lönnberg.

2025. McGILCHRIST (1905). *Natural History Notes from the R. I. M. S. "Investigator" Capt. R. H. Heming, R. N. (retired), Commanding. Series III, No. 8. On a New Genus of Teleostean Fish Closely Allied to Chiasmodus.* Ann. Mag. Nat. Hist. (7), XV, 268–270.

A. C. McGILCHRIST.

Dysalotus McGilchrist, 268; orthotype D. ALCOCKI McGilchrist.

2026. PELLÉGRIN (1905). *Poisson nouveau de Mozambique.* Bull. Mus. Paris, XI, 145–146.

JACQUES PELLÉGRIN.

Xenopomichthys Pellégrin, 145; orthotype X. AURICULATUS Pellégrin.

2027. PELLÉGRIN (1905). *Mission Scientifique en Afrique Centrale.* Mem. Soc. Zool. de France.

JACQUES PELLÉGRIN.

Astatochromis Pellégrin, 183; orthotype A. ALLAUDI Pellégrin.

2028. POPTA (1905). *Suites des descriptions préliminaires des nouvelles espèces de poissons recueillis par M. le Dr. A. W. Nieuwenhuis en 1898 et en 1900.* Notes Leyden Mus., XXV, 171–187.

CANNA M. L. POPTA.

Neogastromyzon Popta, 180; orthotype N. NIEUWENHUISII Popta.

Parophiocephalus Popta, 183; orthotype P. UNIMACULATUS Popta. A synonym of BETTA Blkr.

2029. REGAN (1905). *A Synopsis of the Species of the Silurid Genera Parexostoma, Chimarrhichthys, and Exostoma.* Ann. Mag. Nat. Hist. (7), XV, 182.

CHARLES TATE REGAN.

Parexostoma Regan, 182; logotype EXOSTOMA STOLICZKÆ Day.

2030. REGAN (1905). *A Revision of the Fishes of the American Cichlid Genus Cichlasoma and of the Allied Genera.* Ann. Mag. Nat. Hist. (7), XV, 60–77; 225–243, 316–340.

CHARLES TATE REGAN.

Parapetenia Regan, 324; orthotype ACARA ADSPERSA Gthr.

2031. REGAN (1905). *A Revision of the Fishes of the South American Cichlid Genera Acara, Nannacara, Acaropsis, and Astronotus.* Ann. Mag. Nat. Hist. (7), XV, 329–427.

CHARLES TATE REGAN.

Nannacara Regan, 344; orthotype N. ANOMALA Regan.

2032. REGAN (1905). *(Gymnapogon).* Ann. Mag. Nat. Hist., XV.

CHARLES TATE REGAN.

Gymnapogon Regan, 19; orthotype G. JAPONICUS Regan.

2033. SAUTER (1905). *Notes from the Owston Collection.* Annot. Zool. Japan, V, 233–238.

HANS SAUTER.

Ijimaia Sauter, 233; orthotype I. DOFLEINI Sauter.

2034. STROMER (1905). *Die Fischreste des mittleren und oberen Eocens von Aegypten.* Beitr. Pal. Oesterr-Ung., XVIII, 37–58.

ERNST STROMER VON REICHENBACH.

Eopristis Stromer, 52; orthotype P. REINACHI Stromer.

2035. TOULA (1905). *Ueber einem dem Thunfische verwandten Raub-fish der Congerienschichten der Wiener Bucht. . . .* Jahrb. Geol. Reichsanst. Wien., LV.

FRANZ TOULA (1845–).

Pelamycybium Toula, 51; orthotype P. SINUS-VINDOBONENSIS Toula (fossil).

2036. WAITE (1905). *Notes on Fishes from Western Australia, III.* Rec. Austral. Mus., VI, 1905, 55–82.

EDGAR RAVENSWOOD WAITE.

Neatypus Waite, 64; orthotype N. OBLIQUUS Waite.
Bramichthys Waite, 72; orthotype B. WOODWARDI Waite.
Dipulus Waite, 77; orthotype D. CÆCUS Waite.

1906.

2037. ABEL (1906). *Fossile Flugfische.* Verh. Deutsche. Zool. Ges., XV, 47–48.

OTHENIO ABEL.

Dollopterus Abel, 47; orthotype DOLICHOPTERUS VOLITANS Compter (fossil).
Gigantopterus Abel, 48; orthotype G. TELLERI Abel (fossil).

2038. AMEGHINO (1906). *Les formations sedimentaires du crétacé supérieur et du Tertiaire de Patagonie, etc.* Ann. Mus. Nat. Buenos Aires, XV.

FLORENTINO AMEGHINO.

Pseudacrodus Ameghino, 176; orthotype P. PATAGONIENSIS Ameghino (fossil).
Carcharioides Ameghino, 183; orthotype C. TOTUSERRATUS Ameghino (fossil).

2039. BERG (1906). *Uebersicht der Marsipobranchii des russischen Reiches.* St. Petersburg, Bull. Ac. Ser. 5, XXIV, 169–183.

LEW SEMENOWITCH BERG.

Caspiomyzon Berg, 177; orthotype PETROMYZON WAGNERI Kessler.

2040. BERG (1906). *Uebersicht der Cataphracti (Fam. Cottidæ, Cottocomephoridæ und Comephoridæ) des Baikalsees.* Zool. Anz., XXX, 1906, 906–911.

LEW SEMENOWITCH BERG.

Asprocottus Berg, 907; orthotype A. HERZENSTEINI Berg.
Abyssocottus Berg, 908; orthotype A. KOROTNEFFI Berg.
Limnocottus Berg, 909; orthotype COTTUS GODLEWSKII Dybowski.

2041. BOULENGER (1906). *Fourth Contribution to the Ichthyology of Lake Tanganyika. Report on the Collection of Fishes Made by Dr. W. A. Cunnington during the Third Tanganyika Expedition, 1904–1905.* Trans. Zool. Soc. London, XVII, 1906, 537–576.

GEORGE ALBERT BOULENGER.

Dinotopterus Boulenger, 550; orthotype D. CUNNINGTONI Boulenger.

Phyllonemus Boulenger, 552; orthotype P. TYPUS Boulenger.
Haplotaxodon Boulenger, 566; orthotype H. MICROLEPIS Boulenger.
Cunningtonia Boulenger, 573; orthotype C. LONGIVENTRALIS Boulenger.

2042. BOULENGER (1906). *Descriptions of New Fishes Discovered by Mr. E Degen in Lake Victoria.* Ann. Mag. Nat. Hist., XVII, 433–452.
GEORGE ALBERT BOULENGER.

Platyæniodus Boulenger, 451; orthotype P. DEGENI Boulenger.

2043. BRAUER (1906). *Die Tiefsee-Fische. I. Syst. Theil. (Wissenschaftl. Ergebnisse der deutschen Tiefsee-Expedition).* Jena, 1906, 1–432.
AUGUST BRAUER.

Stylophthalmus Brauer, 70; orthotype S. PARADOXUS Brauer.
Oxyodon Brauer, 287; orthotype O. MACROPS Brauer.
Bassobythites Brauer, 307; orthotype B. BRUNSWIGI Brauer.

2044. EASTMAN (1906). *Structure and Relations of Mylostoma.* Bull. Mus. Comp. Zool., L, 1–29. (May, 1906.)
CHARLES ROCHESTER EASTMAN.

Dinomylostoma Eastman, 23; orthotype D. BEECHERI Eastman (fossil, teeth and body plates): (mentioned earlier, February, 1906, in a paper on ARTHRODIRES. Amer. Journ. Sci., XXI, 137). ARTHRODIRA, Devonian.

2045. EVERMANN & KENDALL (1906). *Notes on a Collection of Fishes from Argentina, South America, with Descriptions of Three New Species.* Proc. U. S. Nat. Mus., XXXI, 67–108. (July 25, 1906.)
BARTON WARREN EVERMANN; WILLIAM CONVERSE KENDALL.

Odontesthes Evermann & Kendall, 94; orthotype O. PERUGIÆ Evermann & Kendall.

2046. FOWLER (1905). *Some Cold-Blooded Vertebrates from the Florida Keys.* Proc. Acad. Nat. Sci. Phila., LVIII, 77–113. (May 29, 1906.)
HENRY WEED FOWLER.

Congrammus Fowler, 105; orthotype C. MOOREI Fowler.

2047. FOWLER (1906). *New, Rare, or Little Known Scombroids,. III.* Proc. Acad. Nat. Sci. Phila., LVIII, 114–122. (June 20, 1906.)
HENRY WEED FOWLER.

Glaucus (Klein) Fowler, 116; orthotype SCOMBER AMIA L. Revived as reprinted by Walbaum, *Artedi Piscium,* III, 585, 1792, to replace HYPODIS Raf., HYPACANTHA Raf., LICHIA Cuv., and PORTHMEUS Cuv. & Val. This choice of type antedates that of Jordan & Hubbs, 1915. SCOMBER GLAUCUS L., replacing CÆSIMORUS Lac., the law of tautonomy would apply here, and the names of Klein, however reprinted, are not yet declared eligible.
Pampanoa Fowler, 116; orthotype CHÆTODON GLAUCUS Bloch.
Pterorhombus Fowler, 118; orthotype FIATOLA FASCIATA Risso.
Priacanthopsis Fowler, 122; orthotype PEMPHERIS MULLERI Poey.

2048. FOWLER (1906). *Further Knowledge of Some Heterognathous Fishes.* Proc. Acad. Nat. Sci. Phila., LVIII, I, 293–351. (Sept. 25, 1906.)
HENRY WEED FOWLER.

The numerous genera indicated in this paper have been critically reviewed by Dr. Carl H. Eigenmann, Amer. Nat. Dec., 1907. From this paper I draw the comments on the different genera proposed.

Ophiocephalops Fowler, 293; orthotype Erythrinus unitæniatus Ag. A synonym of Hoplerythrinus Gill.

Copeina Fowler, 294; orthotype Pyrrhulina argyrops Fowler. A substitute for Holotaxis of Eigenmann, not of Cope.

Cyphocharax Fowler, 297; orthotype Curimatus spilurus Gthr.

Steindachnerina Fowler, 298; orthotype Curimatus trachystethus Cope. Probably a synonym of Curimata Walbaum (Curimatus Cuv.).

Peltapleura Fowler, 300; orthotype Salmo cyprinoides L. A synonym of Curimata Walbaum.

Eigenmannina Fowler, 307; orthotype Anodus melanopogon Cope.

Chilomyzon Fowler, 309; orthotype Prochilodus steindachneri Fowler. A synonym of Prochilodus.

Hemiodopsis Fowler, 318; orthotype Hemiodus microlepis Kner.

Pithecocharax Fowler, 319; orthotype Salmo anostomus L. A substitute for Anostomus Cuv., regarded as preoccupied by Anastomus Bonnaterre, 1788. But Anostomus dates from Gronow (1763), revived by Scopoli (1777).

Pœcilosomatops Fowler, 323; orthotype Characidium etheostoma Cope. A synonym of Nanognathus Boulenger, a section of Characidium.

Garmanina Fowler, 326; orthotype Rhytodus argenteofuscus Kner.

Abramites Fowler, 331; orthotype Leporinus hypselonotus Gthr. A synonym of Leporinus Cuv. & Val.

2049. GARMAN (1906). *New Plagiostomia.* Bull. Mus. Comp. Zool., Harvard Coll., XLVI, 201–208.

Samuel Garman.

Parmaturus Garman, 201; orthotype P. pilosus Garman.

2050. GILCHRIST (1903). *Descriptions of Fifteen New South African Fishes, with Notes on Other Species.* Cape Town, Marine Investiga., IV, 1906, 143–171.

J. D. F. Gilchrist.

Pseudocyttus Gilchrist, 152; orthotype P. maculatus Gilchrist.

Neostomias Gilchrist, 168; orthotype N. filiferum Gilchrist.

2051. GRACIANOV (1906). *Ueber eine besondere Gruppe der Rochen.* Zool. Anz., XXX, 399–406. (Dec., 1906.)

Valerian Gracianov (or Gratzianow).

Brachioptera Gratzianow, 402; orthotype B. rhinoceros Gratzianow.

Planerocephalus Gracianov, 403; orthotype P. ellioti Gracianov.

2052. GRACIANOV (1906). *Die Neunaugen des Russischen Reiches.* Text in Russian. Moskv. Dnevn. zool. otd. obsc. liub. jest., 3, 7–8, 1907, 18.

Valerian Gracianov.

Agnathomyzon Gracianov, 18; orthotype Petromyzon wagneri Kessler. A synonym of Caspiomyzon Berg (September, 1906).

Haploglossa Gracianov, 18; orthotype A. caspicus Wagner = Petromyzon wagneri Kessler. A synonym of Caspiomyzon Berg.

2053. JORDAN & SEALE (1906). *Descriptions of Six New Species of Fishes from Japan.* Proc. U. S. Nat. Mus., XXX, 143–148.

David Starr Jordan; Alvin Seale.

Sayonara Jordan & Seale, 145; orthotype S. satsumæ Jordan & Seale.

2054. JORDAN & SEALE (1906). *The Fishes of Samoa. Descriptions of Species Found in the Archipelago, with a Provisional Check-List of the Fishes of Oceania.* Bull. Bur. Fish., XXV, 173–455. (Dec. 15, 1906.)

DAVID STARR JORDAN; ALVIN SEALE.

Anarchias Jordan & Seale, 204; orthotype A. ALLARDICEI Jordan & Seale.

Psettias (Jordan) Jordan & Seale, 237; orthotype PSETTUS SEBÆ Cuv. & Val.

Rooseveltia (Jordan & Evermann) Jordan & Seale, 265; orthotype SERRANUS BRIGHAMI Seale.

Oceanops Jordan & Seale, 277; orthotype LABRUS LATOVITTATA Lac.

Lo Seale, 360; orthotype AMPHACANTHUS VULPINUS Schlegel & Müller.

Abalistes Jordan & Seale, 364; orthotype BALISTES STELLARIS Bl. & Sch. Substitute for LEIURUS Sw., preoccupied.

Trimma Jordan & Seale, 391; orthotype T. CÆSIURA Jordan & Seale.

Vitreola Jordan & Seale, 393; orthotype V. SAGITTA Jordan & Seale.

Vaimosa Jordan & Seale, 395; orthotype V. FONTINALIS Jordan & Seale. A synonym of MUGILOGOBIUS Smitt, 1899.

Vailima Jordan & Seale, 398; orthotype V. STEVENSONI Jordan & Seale.

Exyrias Jordan & Seale, 405; orthotype GOBIUS PUNTANGOIDES Blkr.

Pselaphias Jordan & Seale, 406; orthotype GOBIUS OPHTHALMONEMUS Blkr.

Waitea Jordan & Seale, 407; orthotype GOBIUS MYSTACINUS Cuv. & Val.

Mars Jordan & Seale, 408; orthotype M. STRIGILLICEPS Jordan & Seale.

Kelloggella Jordan & Seale, 409; orthotype K. CARDINALIS Jordan & Seale. (First noticed by Jordan & Evermann, *Fishes of Hawaii*, 1905.)

Sauvagea Jordan & Seale, 420; orthotype LEPIDOBLENNIUS CALEDONICUS Sauvage. Substitute for LEPIDOBLENNIUS Sauvage, preoccupied.

2055. JORDAN & SNYDER (1906). *A Review of the Pœciliidæ or Killifishes of Japan.* Proc. U. S. Nat. Mus., XXXI, 287–290. (Sept. 10, 1906.)

DAVID STARR JORDAN; JOHN OTTERBEIN SNYDER.

Oryzias Jordan & Snyder, 289; orthotype PŒCILIA LATIPES T. & S.

2056. JORDAN & STARKS (1906). *Notes on a Collection of Fishes from Port Arthur, Manchuria, Obtained by James Francis Abbott.* Proc. U. S. Nat. Mus., XXXI, 515–526. (Sept. 10, 1906.)

DAVID STARR JORDAN; EDWIN CHAPIN STARKS.

Ranulina Jordan & Starks, 523; orthotype R. FIMBRIIDENS Jordan & Starks.

2057. JORDAN & STARKS (1906). *A Review of the Flounders and Soles of Japan.* Proc. U. S. Nat. Mus., XXXI, 161–246.

DAVID STARR JORDAN; EDWIN CHAPIN STARKS.

Cynopsetta (Schmidt) Jordan & Starks, 188; orthotype C. DUBIA Schmidt.

Limandella Jordan & Starks, 204; orthotype PLEURONECTES YOKOHAMÆ Gthr.

Amate Jordan & Starks, 228; orthotype ACHIRUS JAPONICUS T. & S.

2058. LERICHE (1908). *Note préliminaire sur les poissons nouveaux de l'Oligocène Belge.* Bull. Soc. Belge Geol., XXII.

MAURICE LERICHE.

Neocybium Leriche, 379; orthotype N. ROSTRATUM Leriche (fossil).

2059. OGILBY (1906). *(A New Genus of Sharks.)* Proc. Roy. Soc. Queensland, XX.

JAMES DOUGLAS OGILBY.

Brachælurus Ogilby, 27; orthotype CHILOSCYLLIUM MODESTUM Gthr.

2060. OSORIO (1906). *Description d'un poisson des profondeurs appartenant à un genre nouveau et trouvé sur les côtes du Portugal.* Lisboa, J. Sci., VII. 1906, 172–174.

BALTHAZAR OSORIO.

Lophocephalus Osorio, 173; orthotype L. ANTHRAX Osorio.

2061. PAPPENHEIM (1906). *Neue und ungenügend bekannte elektrische Fische (Mormyridæ) aus den deutsch-afrikanischen Schutzgebieten.* Sitzber. Ges. Naturf. Berlin, 1906, 260–264.

PAUL PAPPENHEIM.

Hippopotamyrus Pappenheim, 260; orthotype H. CASTOR Pappenheim.

2062. REGAN (1906). *A Revision of the South American Cichlid Genera Retroculus, Geophagus, Heterogramma, and Biotœcus.* Ann. Mag. Nat. Hist., XVII, 49–66.

CHARLES TATE REGAN.

Heterogramma Regan, 63; orthotype H. BORELLI Regan = H. RITENSE Haseman. Name preoccupied; replaced by APISTOGRAMMA Regan, 1913.

2063. REGAN (1906). *Notes on Some Loricariid Fishes, with Descriptions of Two New Species.* Ann. Mag. Nat. Hist. (7), XVII, 94–98.

CHARLES TATE REGAN.

Thysanocara Regan, 96; orthotype XENOCARA CIRRHOSA Regan.

2064. REGAN (1906). *Descriptions of New or Little Known Fishes from the Coast of Natal.* Ann. Natal Govt. Mus., I, pt. 1, 1–6.

CHARLES TATE REGAN.

Pliotrema Regan, 1; orthotype P. WARRENI Regan.

2065. SEALE (1906). *Fishes of the South Pacific. Honolulu, H. I.* Occ. Papers Bernice Bishop Mus., 4, 1906, 1–89.

ALVIN SEALE.

Deleastes Seale, 80; orthotype D. DÆCTOR Seale.

2066. SMITH & POPE (1906). *List of Fishes Collected in Japan in 1903, with Descriptions of New Genera and Species.* Proc. U. S. Nat. Mus., XXXI, 459–499. (Sept. 24, 1906.)

HUGH MCCORMICK SMITH; THOMAS E. B. POPE.

Tosana Smith & Pope, 470; orthotype T. NIWÆ Smith & Pope.

Satsuma Smith & Pope, 472; orthotype S. MACROPS Smith & Pope. A synonym of MALAKICHTHYS Döderlein.

Lysodermus Smith & Pope, 483; orthotype L. SATSUMÆ Smith & Pope.

Lambdopsetta Smith & Pope, 496; orthotype L. KITAHARÆ Smith & Pope.

2067. SMITH & SEALE (1906). *Notes on a Collection of Fishes from the Island of Mindanao, Philippine Archipelago, with Descriptions of New Genera and Species.* Proc. Biol. Soc. Wash., XIX, 73–82.

HUGH MCCORMICK SMITH; ALVIN SEALE.

Illana Smith & Seale, 73; orthotype I. CACABET Smith & Seale.

Caragobius Smith & Seale, 81; orthotype C. TYPHLOPS Smith & Seale.

2068. STEINDACHNER (1906). *Ueber eine neue Gattung und Art aus der Familie der Murænidæ, Nettastomops barbatula.* Anz. Ak. Wiss., 1906, 299–300.

FRANZ STEINDACHNER.

Nettastomops Steindachner, 299; orthotype N. BARBATULA Steind.

2069. STEINDACHNER (1906). *Zur Fischfauna der Samoa-Inseln.* Sb. Ak. Wiss. Wien., CXV, July, 1906.
FRANZ STEINDACHNER.

Kræmeria Steindachner, 1409 (41); orthotype K. SAMOENSIS Steind. (TRICHONOTIDÆ).

2070. WERNER (1906). *Beiträge zur Kenntnis der Fischfauna des Nils.* Ans Ak. Wiss. Wien., 1906, 325–327.
FRANZ WERNER.

Slatinia Werner, 326; orthotype S. MONGALLENSIS Werner.

1907.

2071. BERG (1907). *Die Cataphracti des Baikal-Sees. (Fam. Cottidæ, Cottocomephoridæ und Comephoridæ.) Beiträge zur Osteologie und Systematik.* St. Petersberg und Berlin, 1907, 1–75.
LEW SEMENOWITCH BERG.

Cottinella Berg, 45; orthotype ABYSSOCOTTUS BOULENGERI Berg.

2072. BERG (1907). *Description of a New Cyprinoid Fish, Paraleucogobio notacanthus, from North China.* Ann. Mag. Nat. Hist., XIX, 1907, 163–164.
LEW SEMENOWITCH BERG.

Paraleucogobio Berg, 163; orthotype P. NOTACANTHUS Berg.

2073. BERG (1907). *Verzeichniss der Fische von Russisch-Turkestan.* St. Petersberg, Ann. Mus. Zool. Ac. Sc., X, 1905 (1907), 316–332.
LEW SEMENOWITCH BERG.

Aspiolucius Berg, 12; orthotype ASPIUS ESOCINUS Kessler.

2074. BERG (1907). *Description of a New Cyprinoid Fish, Acheilognathus signifer, from Korea, with a Synopsis of All the Known Rhodeinæ.* Ann. Mag. Nat. Hist., XIX, 159–163.
LEW SEMENOWITCH BERG.

Pararhodeus Berg, 160; orthotype RHODEUS SYRIACUS Lortet.

2075. BERG (1907). *Beschreibungen einiger neuer Fische aus dem Stromgebiet des Amur.* St. Petersburg, Ann. Mus. Zool. Ac. Sc., XII, 1907, 418–423.
LEW SEMENOVITCH BERG.

Plagiognathops Berg, 419; orthotype PLAGIOGNATHUS JELSKII Dybowski = XENOCYPRIS MICROLEPIS Blkr. A substitute for PLAGIOGNATHUS Berg, preoccupied in HEMIPTERA.

2076. EASTMAN (1907). *Devonic Fishes of the New York Formations.* Mem. N. Y. State Mus., X, 1907.
CHARLES ROCHESTER EASTMAN.

Protitanichthys Eastman, 144; orthotype P. FOSSATUS Eastman (fossil; front half of a cranium of an ARTHRODIRE). A snyonym of COCCOSTEUS Ag. (See Hussakof. Science, XXVIII, 311, 1909.)

2077. EIGENMANN (1907). *The Pœciliid Fishes of Rio Grande do Sul and the La Plata Basin.* Proc. U. S. Nat. Mus., XXXII, 1907, 425–433 (May 23, 1907).

CARL H. EIGENMANN.

Acanthophacelus Eigenmann, 425; orthotype PŒCILIA RETICULATA Peters. A synonym of LEBISTES Philippi, 1861, according to Henn.

Ilyodon Eigenmann, 427; orthotype I. PARAGUAYENSE Eigenmann.

Phalloptychus Eigenmann, 430; orthotype GIRARDINUS JANUARIUS Hensel.

Phalloceros Eigenmann, 431; orthotype GIRARDINUS CAUDOMACULATUS Hensel.

2078. EIGENMANN (1907). *Fowler's "Heterognathus Fishes," with a note on the Stethaprioninæ.* Amer. Naturalist, XLI, No. 492, 1907, 767–772.

CARL H. EIGENMANN.

Phenacogaster Eigenmann, 769; orthotype ASTYANAX PECTINATUS Cope.

Astyacinus Eigenmann, 769; orthotype ASTYANAX MOORI Boulenger.

Fowlerina Eigenmann, 771; orthotype TETRAGONOPTERUS COMPRESSUS Gthr. Name preoccupied; replaced by EPHIPPICHARAX Fowler.

2079. EIGENMANN & BEAN (1907). *An Account of Amazon River Fishes Collected by J. B. Steere, with a Note on Pimelodus clarias.* Proc. U. S. Nat. Mus., XXXI, 659–668. (Jan. 16, 1907.)

CARL H. EIGENMANN; BARTON APPLER BEAN.

Tænionema Eigenmann & Bean, 662; orthotype BRACHYPLATYSTOMA STEEREI Eigenmann & Bean.

Paracetopsis Eigenmann & Bean, 665; orthotype CETOPSIS OCCIDENTALIS.

2080. EIGENMANN & OGLE (1907). *An Annoted List of Characine Fishes in the United States Nat. Mus. and the Mus. of Ind. Univ., with Descriptions of New Species.* Proc. U. S. Nat. Mus., XXXIII, 1–36. (Sept. 10, 1907.)

CARL H. EIGENMANN; FLETCHER OGLE.

Gilbertolus Eigenmann, 2; orthotype ANACYRTUS ALATUS Steind. Substitute for GILBERTELLA Eigenmann, preoccupied.

Evermannolus Eigenmann, 2; orthotype CYNOPOTAMUS BISERIALIS Garman. Substitute for EVERMANNELLA Eigenmann, preoccupied.

Phenacogrammus Eigenmann, 30; orthotype MICRALESTES INTERRUPTUS Boulenger.

2081. EIGENMANN, McATEE & WARD (1907). *On Further Collections of Fishes from Paraguay.* Ann. Carnegie Mus., 4, 1907, 110–157.

CARL H. EIGENMANN; W. J. McATEE; D. P. WARD.

Homodiætus Eigenmann & Ward, 117; orthotype H. ANISTISTI Eigenmann & Ward.

Henonemus Eigenmann & Ward, 118; orthotype STEGOPHILUS INTERMEDIUS Eigenmann & Eigenmann.

Bryconamericus Eigenmann, 139; orthotype B. EXODON Eigenmann.

Deuterodon Eigenmann, 140; orthotype D. IGUAPE Eigenmann.

Chætobranchopsis Eigenmann & Ward, 144; orthotype C. AUSTRALIS Eigenmann & Ward.

2082. EVERMANN & SEALE (1907). *Fishes of the Philippine Islands.* Bull. Bur. of Fish., XXVI (1906), 1907, 49–110.

BARTON WARREN EVERMANN; ALVIN SEALE.

Nesogrammus Evermann & Seale, 61; orthotype N. PIERSONI Evermann & Seale.

Hypomacrus Evermann & Seale, 101; orthotype H. ALBIENSIS Evermann & Seale.

(1906 according Zool. Rec.)

2083. FOWLER (1907). *Further Knowledge of Some Heterognathous Fishes, II.* Proc. Ac. Nat. Sci. Phila., LVIII, 431–483. (Jan. 7 and Jan. 16, 1907.)

HENRY WEED FOWLER.

Pellegrinina Fowler, 442; orthotype P. HETEROLEPIS Fowler.

Coscinoxyron Fowler, 450; orthotype CHALCINUS CULTER Cope.

Thoracocharax Fowler, 452; orthotype GASTROPELECUS STELLATUS Kner.

Cyrtocharax Fowler, 454; orthotype ANACYRTUS LIMÆSQUAMIS Cope. A synonym of CYNOPOTAMUS.

Cynocharax Fowler, 457; orthotype ANACYRTUS AFFINIS Gthr.

Sphyrænocharax Fowler, 460; orthotype XIPHORHAMPHUS ABBREVIATUS Cope. A synonym of ACESTRORHAMPHUS Eigenmann.

Belonocharax Fowler, 464; orthotype B. BEANI Fowler. A synonym of LUCIOCHARAX Steind., and of the imperfectly described CTENOLUCIUS Gill.

Waiteina Fowler, 473; orthotype MYLETES NIGRIPINNIS Cope. Probably a synonym of COLOSSOMA Eigenmann.

Reganina Fowler, 475; orthotype MYLESTES BIDENS Ag. Probably a synonym of COLOSSOMA.

Starksina Fowler, 476; orthotype MYLESTES HARNIARIUS Cope. Probably a synonym of MYLOSOMA.

Sealeina Fowler, 478; orthotype MYLESTES LIPPINCOTTIANUS Cope.

2084. FOWLER (1907). *Some New and Little Known Percoid Fishes.* Proc. Acad. Nat. Sci Phila., LVIII, 510–528. (Feb. 14, 1907.)

HENRY WEED FOWLER.

Boulengerina Fowler, 512; orthotype DULES MATO Lesson. Name preoccupied; replaced by SAFOLE Jordan.

Astrapogon Fowler, 527; orthotype APOGONICHTHYS STELLATUS Cope.

2085. FOWLER (1907). *Notes on Serranidæ.* Proc. Acad. Nat. Sci. Phila., LIX, 249–269. (Aug. 16, 1907.)

HENRY WEED FOWLER.

Chrysoperca Fowler, 250; orthotype MORONE INTERRUPTA Gill.

Eudulus Fowler, 264; orthotype DULES AURIGA Cuv. Substitute for DULES Cuv., regarded as preoccupied by DULUS, a genus of birds.

Callidulus Fowler, 265; orthotype CENTROPRISTIS SUBLIGARIUS Cope.

2086. FOWLER (1907). *A Collection of Fishes from Victoria, Australia.* Proc. Acad. Nat. Sci. Phila., LIX, 419–444.

HENRY WEED FOWLER.

Psychichthys Fowler, 419; orthotype HYDROLAGUS WAITEI Fowler.

Limiculina Fowler, 425; orthotype CENTRISCUS HUMEROSUS Rich. A synonym of CENTRISCOPS Gill.

Macleayina Fowler, 426; orthotype HIPPOCAMPUS BLEEKERI Fowler.

Castelnauia Fowler, 426; orthotype SOLENOGNATHUS SPINOSISSIMUS Gthr.

Lesueurina Fowler, 440; orthotype L. PLATYCEPHALA Fowler. (Written also LESUEURIELLA, a slip of proof-reading.)

2087. GRACIANOV (1907). *Versuch einer Uebersicht der Fische des Russischen Reiches in systematicher und geographischer Hinsicht.* (Text in Russian.) Trd. Otd. Ichtiol. Obsc. Akklimat. Moskva., 4, 1907, 1–567.

VALERIAN GRACIANOV.

Malacobatis Gracianov, 39; orthotype RAJA MUCOSA Pallas.

Hexagrammoides Gracianov, 289; orthotype H. NUDIGENIS Gracianov, which is probably HEXAGRAMMOS LAGOCEPHALUS (Pallas) or perhaps H. SUPERCILIOSUS (Pallas). A synonym of HEXAGRAMMOS Steller. It is very briefly described from a specimen from Bering Island. "Division of the dorsal fin not complete; in the first dorsal about 20 rays." The name "NUDIGENIS" indicates scaleless cheeks, but H. STELLERI, with the cheeks more fully naked, has more than 20 dorsal spines.

Taurulus Gracianov, 296; orthotype COTTUS BUBALIS Euphrasen.

Trigrammus Gracianov, 418; orthotype ERNOGRAMMUS STROSHI Schmidt.

Pseudophidium Gracianov, 420; orthotype OPHIDIUM GIGANTEUM Kittlitz.

2088. GRACIANOV (1907). *Uebersicht de Süsswassercottiden des russischen Reiches.* Zool. Anz., XXXI, 1907, 654–660.

VALERIAN GRACIANOV.

Cephalocottus Gracianov, 659; orthotype COTTUS AMBLYSTOMOPSIS Schmidt.

Mesocottus Gracianov, 660; orthotype COTTUS HAITEI Dybowski.

2089. HAY (1907). *A New Genus and Species of Fossil Shark Related to Edestus Leidy.* Science (new ser.), XXVI, 1907, 22–24.

OLIVER PERRY HAY.

Lissoprion Hay, 22; orthotype L. FERRIERI Hay (fossil).

2090. IHERING (1907). *Diverses especias novas de peixes nemathognathes de Brazil, notas preliminares.* Revista Mus. Paulista, n. s. I, 13–39.

RUDOLF VON IHERING.

Rhamdioglanis Ihering, 16; orthotype R. FRENATUS Ihering. A synonym of IMPARFINIS Eigenmann & Norris.

Aspidoras Ihering, 30; orthotype A. ROCHEI Ihering.

2090A. IHERING (1907). *Notas Preliminares, fasciculo I.* Revista Mus. Paulista, I, 13–39.

RUDOLF VON IHERING.

Rhamdioglanis Ihering, 16; orthotype R. FRENATUS Ihering.

2091. JAEKEL (1907). *Ueber Pholidosteus die Mundung und die Körperform der Placodermen.* Sitzber. Ges. Naturf. Freunde, 1907, 170–186.

OTTO JAEKEL.

Pholidosteus Jaekel, 171; orthotype P. FRIEDELII Jaekel.

2092. JORDAN (1907). *A Review of the Fishes of the Family Histiopteridæ Found in the Waters of Japan, with a Note on Tephritis Günther.* Proc. U. S. Nat. Mus., XXXII, 235–239. (Mar. 12, 1907.)

DAVID STARR JORDAN.

Gilchristia Jordan, 236; orthotype HISTIOPTERUS RICHARDSONI Gilchrist. A synonym of PSEUDOPENTACEROS Blkr.

Quadrarius Jordan, 236; orthotype PENTACEROS DECACANTHUS Gthr.

Quinquarius Jordan, 236; orthotype PENTACEROS JAPONICUS Döderlein. To replace PENTACEROS Cuv. & Val., regarded as preoccupied, a question not yet decided.

Zanclistius Jordan, 236; orthotype HISTIOPTERUS ELEVATUS Ramsay & Ogilby.

Evistias Jordan, 237; orthotype HISTIOPTERUS ACUTIROSTRIS T. & S. (not EVISTIUS Gill).

Velifracta Jordan, 239; orthotype PLEURONECTES SINENSIS Lac. Substitute for TEPHRITIS Gthr., preoccupied in flies (Fabricius, 1799). A synonym of the earlier substitute, TEPHRINECTES Gthr.

2093. JORDAN (1907). *The Fossil Fishes of California, with Supplementary Notes on Other Species of Extinct Fishes.* Univ. Cal. Publ. Geol., V, 1907, 95–144.

DAVID STARR JORDAN.

Xenesthes Jordan, 120; orthotype X. VELOX Jordan (fossil).

Etringus Jordan, 121; orthotype E. SCINTILLANS Jordan (fossil).

Rogenio Jordan, 128; orthotype R. SOLITUDINIS Jordan (fossil).

Merriamella Jordan, 131; orthotype M. DORYSSA Jordan (a fossil stickleback). A synonym of GASTEROSTEUS L.

Knightia Jordan, 131; orthotype CLUPEA HUMILIS Leidy (fossil); the name HUMILIS preoccupied; replaced by KNIGHTIA EOCÆNA Jordan.

Eobrycon Jordan, 140; orthotype TETRAGONOPTERUS AVUS Boulenger (fossil).

2094. JQRDAN & HERRE (1907). *A Review of the Cirrhitoid Fishes of Japan* Proc. U. S. Nat. Mus., XXXIII, 157–167. (Oct. 23, 1907.)

DAVID STARR JORDAN; ALBERT CHRISTIAN HERRE (1868–).

Isobuna Jordan, 158; orthotype PARACIRRHITES JAPONICA Steind. A substitute for PARACIRRHITES Steind., preoccupied.

2095. JORDAN & SEALE (1907). *Fishes of the Islands of Luzon and Panay.* Bull. Bur. Fish., XXIV (1906), 1907, 1–48.

DAVID STARR JORDAN; ALVIN SEALE.

Gennadius Jordan & Seale, 37; orthotype SEBASTES STOLICZKÆ Day. A synonym of CENTROGENYS Rich., a Serranoid fish which resembles a Scorpænoid.

Elates Jordan & Seale, 39; orthotype E. THOMPSONI Jordan & Seale.

Creisson Jordan & Seale, 43; orthotype C. VALIDUS Jordan & Seale.

2096. JORDAN & STARKS (1907). *Note on Otohime, a New Genus of Gurnards.* Proc. U. S. Nat. Mus., XXXII, 131–133.

DAVID STARR JORDAN; EDWIN CHAPIN STARKS.

Otohime Jordan & Starks, 131; orthotype TRIGLA HEMISTICTA T. & S. A near relative of PTERYGOTRIGLA Waite; perhaps a synonym.

2097. MATTHEW (1907). *A New Genus and a New Species of Silurian Fish.* Proc. and Trans. Roy. Soc. Canada, Series I, Sec. 4, pp. 7–9.

GEORGE FREDERICK MATTHEW.

Ctenopleuron Matthew, 7; orthotype C. NEREPISENSE Matthew (fossil OSTRACOPHORE, New Brunswick).

2098. MAWSON AND WOODWARD (1907). *On the Cretaceous Formation of Bahia (Brazil) and on Vertebrate Fossils Collected Therein.* Quart. Journ. Geol. Soc., 63, 1907, 128–138.

JOSEPH MAWSON; ARTHUR SMITH WOODWARD.

Mawsonia Woodward, 134; orthotype M. GIGAS Woodw. (fossil).

2099. MEEK (1907). *Synopsis of the Fishes of the Great Lakes of Nicaragua.* Field Columb. Mus. Pub. Zool., Ser. 7, 1907, 97–132.

SETH EUGENE MEEK.

Erythrichthys Meek, 114; orthotype HEROS CITRINELLUS Gthr. Name twice preoccupied.

2100. OGILBY (1907). *Symbranchiate and Apodal Fishes New to Australia.* Proc. Roy. Soc. Queensland, XX, 1906, 1–15.

JAMES DOUGLAS OGILBY.

Rhabdura Ogilby, 13; orthotype MURÆNA MACRURA Blkr. A synonym of EVENCHELYS J. & E.

2101. OGILBY (1907). *Some New Pediculate Fishes.* Proc. Roy. Soc. Queensland, XX, 1906, 17–25.

JAMES DOUGLAS OGILBY.

Rhycherus Ogilby, 17; orthotype R. WILDII Ogilby.

Tathicarpus Ogilby, 19; logotype T. BUTLERI Ogilby.

Æschynichthys Ogilby, 25; orthotype DICERATIAS BISPINOSUS Gthr. Substitute for DICERATIAS Gthr., regarded as preoccupied by a genus (DICERATIA) of Mollusks.

2102. PELLÉGRIN (1907). *Sur un Poisson acanthopterygien éocène (Parapygæus polyacanthus n. g. n. sp.).* Bull. Soc. Philom. Paris, ser. 9, 171–179.

JACQUES PELLÉGRIN.

Parapygæus Pellégrin, 172; orthotype P. POLYACANTHUS Pellégrin (fossil).

2103. PELLÉGRIN (1907). *Siluride nouveau du Fouta-Djalon.* Bull. Museum Paris, 1907, 25–27.

JACQUES PELLÉGRIN.

Paramphilius Pellégrin, 23; orthotype P. TRICHOMYCTEROIDES Pellégrin.

2104. REGAN (1907). *Pisces.* Biol. Centr. Amer., 1907, 33–168.

CHARLES TATE REGAN.

Xenatherina Regan, 64; orthotype MENIDIA LISA Meek.

Pogonopoma Regan, 205; orthotype PLECOSTOMUS WERTHHEIMERI Steind.

2105. REGAN (1907). *Descriptions of Two New Characinid Fishes from Argentina.* Ann. Mag. Nat. Hist., 1907 (7), XIX, 261–2.

CHARLES TATE REGAN.

Pogonocharax Regan, 261; orthotype P. REHI Regan.

Phoxinopsis Regan, 262; orthotype P. TYPICUS Regan.

2106. REGAN (1907). *Descriptions of Two New Characinid Fishes from South America.* Ann. Mag. Nat. Hist., XX, 1907, 402–403.

CHARLES TATE REGAN.

Mimagoniates Regan, 402; orthotype M. BARBERI Regan.

Ctenocharax Regan, 403; orthotype C. BOGOTENSIS Regan. Probably a synonym of GRUNDULUS BOGOTENSIS Humboldt.

2107. RIBEIRO (1907). *Una novidade ichthyologica; Kosmos, Rio de Janeiro, IV.*

ALIPIO DE MIRANDA RIBEIRO.

Typhlobagrus Ribeiro, 21; orthotype T. KRONEI Ribeiro.

2108. SAUVAGE (1907). *Sur les poissons de la famille des Cichlidæ trouvés dans le terrain de Guelma.* Comptes Rendus, Acad. Sci., 145, 1907, 360–361.

HENRI ÉMILE SAUVAGE.

Palæochromis Sauvage, 361; logotype P. DARESTI Sauvage (fossil).

2109. WAITE (1907). *The Generic Name Crepidogaster.* Rec. Austr. Mus., VI, 1907.

EDGAR RAVENSWOOD WAITE.

Aspasmagaster Waite, 315; orthotype CREPIDOGASTER TASMANIENSIS Gthr. Substitute for CREPIDOGASTER Gthr., preoccupied.

2110. WEBER (1907). *Süsswasserfische von Neu-Guinea; ein Beitrag zur Frage nach dem früheren Zusammenhang von Neu-Guinea und Australien. In Nova Guinea, V.* Zoologie, Leiden, 1907, 529.

MAX WEBER.

Glossolepis Weber, 241; orthotype G. INCISUS Weber.

2111. WOODWARD (1907). *The Fossil Fishes of the English Chalk. Pt. III.* Monogr. Palæont. Soc., 61, 1907, 97–128.

ARTHUR SMITH WOODWARD.

Dinelops Woodward, 121; orthotype D. ORNATUS Woodw. (fossil).

1908.

2112. BARBOUR (1908). *Notes on Rhinomuræna.* Proc. Biol. Soc. Washington, XXI, 39–41.

THOMAS BARBOUR (1884–).

Rhinechidna Barbour, 41; orthotype RHINOMURÆNA ERITIMA Jordan & Seale.

2113. BERG (1908). *Vorläufige Bemerkungen über die europäischasiatischen Salmonien, insbesondere die Gattung Thymallus.* Ann. Mus. Zool. St. Petersb., XII, 1908, 500–514.

LEW SEMENOVICH BERG.

Salmothymus Berg, 502; orthotype SALMO OBTUSIROSTRIS Heckel.
Thymalloides Berg, 503; logotype SALMO ARCTICUS Pallas.

2114. BOULENGER (1908). *Diagnoses of New Fishes Discovered by Capt. E. L. Rhoades in Lake Nyassa.* Ann. Mag. Nat. Hist., II, 1908, 238–243.

GEORGE ALBERT BOULENGER.

Chilotilapia Boulenger, 243; orthotype C. RHOADESII Boulenger.

2115. DOLLO (1908). *Notolepis coatsi. Poisson pélagique nouveau recueilli par l'Expédition Antarctique Nationale Écossaise.* Edinburgh, Proc. Roy. Soc., XXVIII, 58–65.

LOUIS DOLLO.

Notolepis Dollo, 58; orthotype N. COATSI Dollo.

2116. EASTMAN (1908). *Devonian Fishes of Iowa. (With Special Description of the Auditory Organ and Other Soft Parts of Rhadinichthys deani Eastman . . . G. H. Parker.)* Iowa Geol. Surv. Rept., XVIII (1907), 1908, 29–360.

CHARLES ROCHESTER EASTMAN.

Palæophichthys Eastman, 253; orthotype P. PARVULUS Eastman (fossil). (CROSSOPTERYGIAN from Illinois coal measures.)

2117. EIGENMANN (1908). *Preliminary Descriptions of New Genera and Species of Tetragonopterid Characins. (Zoological Results of the Thayer Brazilian Expedition.)* Bull. Mus. Comp. Zool. Harvard Coll., LII, 1908, 91–106.

CARL H. EIGENMANN.

Gymnocorymbus Eigenmann, 93; orthotype G. THAYERI Eigenmann.
Ctenobrycon Eigenmann, 94; orthotype TETRAGONOPTERUS HAUXWELLIANUS Cope.
Thayeria Eigenmann, 94; orthotype T. OBLIQUA Eigenmann.

Psellogrammus Eigenmann, 96; orthotype Hemigrammus kennedyi Eigenmann.
Poptella Eigenmann, 99; orthotype Tetragonopterus longipinnis Eigenmann.
Pristella Eigenmann, 99; orthotype Holopristes riddeii Meek.
Hyphessobrycon Eigenmann, 100; orthotype Hemigrammus compressus Meek.
Brycochandus Eigenmann, 106; orthotype B. durbini Eigenmann.

2118. FOWLER (1908). *Notes on Lancelets and Lampreys.* Proc. Acad. Nat. Sci. Phila., LIX, 1908, 461–466. (Jan. 27, 1908.)
Henry Weed Fowler.
Oceanomyzon Fowler, 461; orthotype O. wilsoni Fowler.

2119. GARMAN (1908). *New Plagiostomia and Chismopnea.* Bull. Mus. Comp. Zool. Harvard Coll., LI, 249–256.
Samuel Garman.
Aëtomylæus Garman, 252; orthotype Myliobatis maculatus Gray.

2120. JORDAN & BRANNER (1908). *The Cretaceous Fishes of Ceará, Brazil.* Smithson. Inst. Misc. Collect., LII, 1908, 1–29.
David Starr Jordan; John Casper Branner (1850–).
Tharrhias Jordan & Branner, 13; orthotype T. araripis Jordan & Branner (fossil).
Enneles Jordan & Branner, 23; orthotype E. audax Jordan & Branner (fossil).
Cearana Jordan & Branner, 27; orthotype C. rochæ Jordan & Branner (fossil).

2121. JORDAN & RICHARDSON (1908). *A Review of the Flat-Heads, Gurnards, and Other Mail-Cheeked Fishes of the Waters of Japan.* Proc. U. S. Nat. Mus., XXXIII, 629–670.
David Starr Jordan; Robert Earl Richardson (1878–).
Rogadius Jordan & Richardson, 630; orthotype Platycephalus asper Cuv. & Val.
Bambradon Jordan & Richardson, 643; orthotype Bembras lævis Nyström.
Ebisinus Jordan & Richardson, 665; orthotype Dactylopterus chirophthalmus Blkr.
Dactyloptena Jordan & Richardson, 665; orthotype Dactylopterus orientalis Cuv. & Val.
Daicocus Jordan & Richardson, 667; orthotype Dactylopterus petersenі Nyström.

2122. JORDAN & RICHARDSON (1908). *Fishes from the Islands of the Philippine Archipelago.* Bull. Bur. Fish, XXVII (1907), 1908, 233–287.
David Starr Jordan; Robert Earl Richardson.
Aparrius Jordan & Richardson, 278; orthotype A. acutipinnis Jordan & Richardson.

2123. JORDAN & SNYDER (1908). *Descriptions of Three New Species of Carangoid Fishes from Formosa.* Mem. Carneg. Mus., IV, 37–40.
David Starr Jordan; John Otterbein Snyder.
Ulua Jordan & Snyder, 39; orthotype U. richardsoni Jordan & Snyder.

2124. JORDAN & STARKS (1908). *On a Collection of Fishes from Fiji, with Notes on Certain Hawaiian Fishes.* Proc. U. S. Nat. Mus., XXXIV. (Sept. 14, 1908.)
David Starr Jordan; Edwin Chapin Starks.
Rastrelliger Jordan & Starks, 607; orthotype Scomber brachysomus Blkr.

2125. OGILBY (1908). *New or Little Known Fishes in the Queensland Museum.* Ann. Queensland Mus., IX, Pt. 1, 1908, 1–41.
James Douglas Ogilby.

Cirriscyllium Ogilby, 4; orthotype CHILOSCYLLIUM MODESTUM Gthr. A synonym (due to oversight) of BRACHÆLURUS Ogilby.

Nemapteryx Ogilby, 10; orthotype ARIUS STIRLINGI Ogilby.

Anyperistius Ogilby, 11; orthotype A. PERUGIÆ Ogilby = EUMEDA ELONGATA Perugia, not of Castelnau, which is the young of NEOSILURUS HYRTLI Steind. A synonym of TANDANUS Mitchell.

Jenynsella Ogilby, 15; orthotype J. WEATHERILLI Ogilby. A synonym of RETROPINNA Gill.

Squalomugil Ogilby, 28; orthotype MUGIL NASUTUS De Vis. A synonym of RHINOMUGIL Gill.

2126. OGILBY (1908). *Revision of the Batrachoididæ of Queensland.* Ann. Queensland Mus., IX, pt. 2, 43–57. (These genera of Toad-fishes had been indicated, not described, by Ogilby in the Ann. Rept. Amateur Fishermen's Association, Queensland, 1907.)

JAMES DOUGLAS OGILBY.

Batrachomœus Ogilby, 46; orthotype B. BROADBENTI Ogilby. Perhaps a synonym of PSEUDOBATRACHUS Castelnau, imperfectly described.

Halobatrachus Ogilby, 46; orthotype BATRACHUS DIDACTYLUS Bl. & Schn.

Coryzichthys Ogilby, 51; orthotype BATRACHUS DIEMENSIS Ogilby.

2127. OGILBY (1908). *Descriptions of New Queensland Fishes.* Proc. Roy. Soc. Queensland, XXI, 1908, 87–98.

JAMES DOUGLAS OGILBY.

Eurycaulus Ogilby, 91; orthotype BELONE PLATYURA Cuv. & Val. (gill rakers present; tail keeled). Name preoccupied; replaced by TROPIDOCAULUS Ogilby.

Stenocaulus Ogilby, 91; orthotype BELONE KREFFTI Gthr.

Pseudomycterus Ogilby, 94; orthotype M. MACCULLOCHI Ogilby. A synonym or section of SCIÆNA L.

2128. OGILBY (1908). *On New Genera and Species of Fishes.* Proc. Roy. Soc. Queensland, XXI, 1–26.

JAMES DOUGLAS OGILBY.

Ptenonotus Ogilby, 13; orthotype EXOCŒTUS CIRRIGER Peters.

Merogymnus Ogilby, 18; orthotype M. EXIMIUS Ogilby.

2129. PASCOE (1908). *Marine Fossils in the Yenangyaung Oil-Field, Upper Burma.* Records Geol. Surv. India, XXXVI, 135–142.

E. H. PASCOE.

Twingonia Pascoe, 138, pl. 18; (no specific name proposed) (fossil, Miocene). Described as a foraminifer, but later shown by E. W. Vredènburg to be a fish otolith or ear bone (*fide* Hussakof).

2130. PELLÉGRIN (1908). *Characinides Americains nouveaux de la Collection du Museum d'Histoire Naturelle.* Bull. Mus. d'Hist. Nat. Paris, VII, 342–347.

JACQUES PELLÉGRIN.

Anostomoides Pellégrin, 346; orthotype A. ANALIS Pellégrin.

2131. REGAN (1908). *Report on the Marine Fishes Collected by Mr. J. Stanley Gardiner in the Indian Ocean.* Trans. Linn. Soc. London, XII, 1908, 217–225.

CHARLES TATE REGAN.

Borostomias Regan, 217; orthotype B. BRAUERI Regan.

Xenanthias Regan, 223; orthotype X. GARDINERI Regan.

Pogonoscorpius Regan, 236; orthotype P. SEYCHELLENSIS Regan.
Psammichthys Regan, 246; orthotype P. NUDUS Regan.
Sladenia Regan, 250; orthotype S. GARDINERI Regan.

2132. REGAN (1908). *Descriptions of New Fishes from Lake Candidius, Formosa, Collected by Dr. A. Moltrecht.* Ann. Mag. Nat. Hist., II, 1908, 358–360.
CHARLES TATE REGAN.

Pararasbora Regan, 360; orthotype P. MOLTRECHTI Regan.

2133. REGAN (1908). *A Synopsis of the Fishes of the Subfamily Salanginæ.* Ann. Mag. Nat Hist. (8), II, 444–446.
CHARLES TATE REGAN.

Hemisalanx Regan, 444; orthotype H. PROGNATHUS Regan.
Parasalanx Regan, 444; logotype P. GRACILLIMUS Regan.

2134. REGAN (1908). *A New Generic Name for An Orectolobid Shark.* Ann. Mag. Nat. Hist., II, 1908, 454–455.
CHARLES TATE REGAN.

Heteroscyllium Regan, 455; orthotype BRACHÆLURUS COLCLOUGHI Ogilby.

2135. REGAN (1908). *A Collection of Fresh-Water Fishes Made by Mr. C. F. Underwood in Costa Rica.* Ann. Mag. Nat. Hist,. II, 1908, 455–464.
CHARLES TATE REGAN.

Petalosoma Regan, 458; orthotype P. CULTRATUM Regan.
Xenorhychichthys Regan, 461; orthotype JOTURUS STIPES J. & G.
Tomocichla Regan, 463; orthotype T. UNDERWOODI Regan.

2136. REGAN (1908). *A Revision of the Sharks of the Family Orectolobidæ.* Proc. Zool. Soc. London, 1908, 347–364.
CHARLES TATE REGAN.

Eucrossorhinus Regan, 357; orthotype CROSSORHINUS DASYPOGON Blkr.

2137. RIBEIRO (1908). *Peixes da Ribeiro, resultados de excursao do Senhor Ricardo Krone* . . . Kosmos, Rio de Janeiro, V, 1–5.
ALIPIO DE MIRANDA RIBEIRO.

Cœlurichthys Ribeiro, 2; orthotype C. IPORANGÆ Ribeiro.

2137A. RIBEIRO (1908). *Peixes, da Ribeiro, resultados de excursão do Sr. Ricardo Krone, membro correspondente do Museu Nacional do Rio de Janeiro,* V, 1–5.
ALIPIO DE MIRANDA RIBEIRO.

Kronichthys Ribeiro, 1; orthotype K. SUBTERES Ribeiro; a synonym of HEMIPSILICHTHYS Eigenmann.

2138. SEALE & BEAN (1908). *On a Collection of Fishes from the Philippine Islands, Made by Maj. Edgar A. Mearns, Surgeon, U. S. Army, with Descriptions of Seven New Species.* Proc. U. S. Nat. Mus., XXXII, 1908, 229–248.
ALVIN SEALE; BARTON APPLER BEAN.

Mearnsella Seale & Bean, 229; orthotype M. ALESTES Seale & Bean.

2139. SNYDER (1908). *Descriptions of Eighteen New Species and Two New Genera of Fishes from Japan and the Riu Kiu Islands.* Proc. U. S. Nat. Mus., XXXV, 93–111. (Oct. 30, 1908).
JOHN OTTERBEIN SNYDER.

Doryptena Snyder, 102; orthotype D. OKINAWÆ Snyder.
Xenisthmus Snyder, 105; orthotype X. PRORIGER Snyder.

2140. STARKS (1908). *On a Communication Between the Air-Bladder and the Ear in Certain Spiny-Rayed Fishes.* Science, XXVIII, 1908, 613–614.

EDWIN CHAPIN STARKS.

Adioryx Starks, 614; orthotype HOLOCENTRUM SUBORBITALE Gill.

2141. STEINDACHNER (1908). *Ueber eine im Rio Juraguà bei Joinville, im Staate S. Catharina, Brasilien . . . eine neue Characinengattung.* Anz. Ak. Wiss. Wien., LXV.

FRANZ STEINDACHNER.

Zungaropsis Steindachner, 7; orthotype Z. MULTIMACULATUS Steind.
Joinvillea Steindachner, 30; orthotype J. ROSÆ Steind. A synonym of DEUTERODON Eigenmann.

2142. TANAKA (1908). *Notes on Some Rare Fishes of Japan, with Descriptions of Two New Genera and Six New Species.* Journ. Coll. Sci. Tokyo, XXIII, Art. 13, 1–24.

SHIGEHO TANAKA.

Tetronarcine Tanaka, 2; orthotype T. TOKIONIS Tanaka.
Gymnosimenchelys Tanaka, 2; orthotype G. LEPTOSOMUS Tanaka.
Paraceratias Tanaka, 18; orthotype CERATIAS MITSUKURII Tanaka.
Owstonia Tanaka, 46; orthotype O. TOTOMIENSIS Tanaka.

2143. WOODWARD (1908). *The Fossil Fishes of the Hawkesbury Series at St. Petersburg.* Mem. Geol. Surv. New South Wales, Palæontology, X, pp. vi, 31.

ARTHUR SMITH WOODWARD.

Elpisopholis Woodward, 17; orthotype E. DUNSTANI Woodw. (fossil) (PALÆONISCIDÆ).

1909.

2144. ANNANDALE (1909). *Report on the Fishes Taken by the Bengal Fisheries Steamer "Golden Crown." Part I, Batoidei.* Mem. Ind. Mus. Calcutta, 2, no. 1, 1909, 1-58.

NELSON ANNANDALE.

Bengalichthys Annandale, 47; orthotype B. IMPENNIS Annandale.

2145. BEAN & WEED (1909). *Description of a New Skate (Dactylobatus armatus) from Deep Water off the Southern Atlantic Coast of the United States.* Proc. U. S. Nat. Mus., XXXVI, 1909, 459–561. (May 27, 1909.)

BARTON APPLER BEAN; ALFRED C. WEED.

Dactylobatus Bean & Weed, 459; orthotype D. ARMATUS Bean & Weed.

2146. BOULENGER (1909). *Descriptions of New Fresh-Water Fishes Discovered by Mr. G. L. Bates in South Cameroon.* Ann. Mag. Nat. Hist., IV, 1909, 186–188.

GEORGE ALBERT BOULENGER.

Champsoborus Boulenger, 187; orthotype C. PELLEGRINI Boulenger.

2147. BROOM (1909). *The Fossil Fishes of the Upper Karoo Beds of South Africa.* Ann. S. Afr. Mus., VII, 251–268.

ROBERT BROOM.

Helichthys Broom, 254; orthotype H. BROWNI Broom (fossil). (PALÆONISCID.)

Hydropessum, 266; orthotype H. TANNEMEYERI Broom (fossil). (Imperfect Fish, GANOID.)

2148. CLIGNY (1909). *Sur un nouveau genre de Zéides.* Comptes Rendus. Acad. Sci. Paris, 148, 1909, 873–874.

ADOLPHE CLIGNY.

Parazenopsis Cligny, 874; orthotype P. ARGENTEUS Cligny.

2149. COCKERELL (1909). *The Nomenclature of the American Fishes Usually Called Leuciscus and Rutilus.* Proc. Biol. Soc. Wash., XXII, 1909, 215–217.

THEODORE DRU ALISON COCKERELL.

Temeculina Cockerell, 216; orthotype LEUCISCUS ORCUTTI Eigenmann & Eigenmann.

Margariscus Cockerell, 217; orthotype CLINOSTOMUS MARGARITA Cope.

2150. COCKERELL & ALLISTON (1909). *The Scales of Some American Cyprinidæ.* Proc. Biol. Soc. Wash., XXII, 1909, 157–163.

THEODORE DRU ALISON COCKERELL; EDITH M. ALLISTON.

Macrhybopsis Cockerell & Alliston, 162; orthotype GOBIO GELIDUS Grd.

2151. COCKERELL & CALLAWAY (1909). *Observations on the Fishes of the Genus Notropis.* Proc. Biol. Soc. Wash., XXII, 1909, 189–196.

THEODORE DRU ALISON COCKERELL; OTIS CALLAWAY.

Coccogenia Cockerell & Callaway, 190; orthotype HYPSILEPIS COCCOGENIS Cope. A synonym of COCCOTIS Jordan.

2152. DOLLO (1909). *Cynomacrurus piriei, poisson abyssal nouveau recueilli par l'Expédition Antarctique Nationale Écossaise.* Proc. Roy. Soc. Edinb., XXIX, 1909, 316–326.

LOUIS DOLLO.

Cynomacrurus Dollo, 316; orthotype C. PIRIEI Dollo.

2153. DURBIN (1909). *A New Genus and Twelve New Species of Tetragonopterid Characins. (Reports on the Expedition to British Guiana of the Indiana University and the Carnegie Museum, 1908, No. 2.)* Ann. Carneg. Mus., VI, 1909, 55–72.

MARION LEE DURBIN.

Dermatocheir Durbin, 55; orthotype D. CATABLEPTA Durbin.

2154. EIGENMANN (1909). *Some New Genera and Species of Fishes from British Guiana. (Reports on the Expedition to British Guiana of the Indiana University and the Carnegie Museum, 1908, No. 1.)* Ann. Carnegie Mus., VI, 1909, 4–54.

CARL H. EIGENMANN.

Corymbophanes Eigenmann, 5; orthotype C. ANDERSONI Eigenmann.

Lithogenes Eigenmann, 6; orthotype L. VILLOSUS Eigenmann.

Pterodiscus Eigenmann, 12; orthotype P. LEVIS Eigenmann.

Carnegiella Eigenmann, 13; orthotype GASTEROPELECUS STRIGATUS Gthr.

Holobrycon Eigenmann, 33; orthotype BRYCON PESU M. & T.

Triurobrycon Eigenmann, 33; orthotype BRYCON LUNDII Lütken.

Pœcilocharax Eigenmann, 34; orthotype P. BOVALII Eigenmann.
Pœcilobrycon Eigenmann, 43; orthotype P. HARRISONI Eigenmann.
Archicheir Eigenmann, 46; orthotype A. MINUTUS Eigenmann.
Acanthophacelus Eigenmann, 52; orthotype A. MELANZONUS Eigenmann.
Tomeurus Eigenmann, 53; orthotype T. GRACILIS Eigenmann.
Microcharax Eigenmann, 55; orthotype NANNOSTOMUS LATERALIS Boulenger.

2155. EIGENMANN (1909). *The Fresh-Water Fishes of Patagonia, and An Examination of the Archiplata-Archihelenis Theory.* Princeton Univ., 3, (Zoology), 1909, 225–374.

CARL H. EIGENMANN.

Hatcheria Eigenmann, 250; orthotype H. PATAGONIENSIS Eigenmann.

2156. GILCHRIST & THOMPSON (1909). *Descriptions of Fishes from the Coast of Natal, Pt. 2.* Ann. S. African Mus., VI, 1909, 213–276.

J. D. F. GILCHRIST; WARDLAW THOMPSON.

Chæropsodes Gilchrist & Thompson, 260; orthotype C. PICTUS Gilchrist & Thompson.

2157. HUSSAKOF (1909). *The Systematic Relations of Certain American Arthrodires.* Bull. Amer. Mus. Nat. Hist., XXVI, 263–272.

LOUIS HUSSAKOF.

Brachygnathus Hussakof, 263; orthotype DINICHTHYS MINOR Newberry (fossil). Based on mandible and dorsomedian. Preoccupied; name replaced by HUSSAKOFIA Cossman.

Dinognathus Hussakof, 268; orthotype D. FEROX Hussakof (fossil). Dental element (fossil: Upper Devonic, Ohio).

2158. JAEKEL (1909). *Fischreste aus den Mamfe-Schiefern.* (In *Beiträge zur Geologie vom Kammerun, bearb., V. C. Guillemain.)* Abh. Geol. Landes Anst. (N. F.), H. 62, 1909 (1910), 392–398.

OTTO JAEKEL.

Proportheus Jaekel, 396; orthotype P. KAMERUNI Jaekel (fossil).

2159. JORDAN & RICHARDSON (1909). *A Catalogue of the Fishes of the Island of Formosa or Taiwan, Based on the Collection of Dr. Hans Sauter.* Mem. Carneg. Mus., IV, No. 4, 1909, 159–204.

DAVID STARR JORDAN; ROBERT EARL RICHARDSON.

Candidia Jordan & Richardson, 169; orthotype OPSARIICHTHYS BARBATUS Regan.

2160. PELLÉGRIN (1909). *Characinidés du Brésil, rapportés par M. Jobert.* Bull. Museum Paris, 1909, 147–153.

JACQUES PELLÉGRIN.

Curimatella Pellégrin, 150; orthotype CURIMATUS ALBURNUS M. & T.
Jobertina Pellégrin, 151; orthotype CHARICIDIUM INTERRUPTUM Pellégrin.

2161. PELLÉGRIN (1909). *Characinidés américains nouveaux de la collection du Museum d'histoire naturelle.* Bull. Mus. Paris, 1908, 342–347.

JACQUES PELLÉGRIN.

Anostomoides Pellégrin, 346; orthotype A. ATRIANALIS Pellégrin.

2162. SEALE (1909). *New Species of Philippine Fishes.* Philip. Journ. Sci., IV, 1909, 49–543.

ALVIN SEALE.

Biat Seale, 532; orthotype B. LUZONICA Seale.
Macgregorella Seale, 533; orthotype M. MOROANA Seale.

2163. SNYDER (1909). *Descriptions of New Genera and Species of Fishes from Japan and the Riu Kiu Islands.* Proc. U. S. Nat. Mus., XXXVI, 1909, 597–610. (June 18, 1909.)

John Otterbein Snyder.

Expedio Snyder, 606; orthotype E. parvulus Snyder.
Inu Snyder, 607; orthotype I. koma Snyder.

2164. STECHE (1909). *Die Leuchtorgane von . . . zwei Oberflachenfischen aus dem Malaischen Archipel.* Zeit. Wiss. Zool. XCIII.

Otto Steche.

Protoblepharon Steche, about 400; orthotype P. palpebratus.

2165. TANAKA (1909). *Descriptions of One New Genus and Ten New Species of Japanese Fishes.* Journ. Coll. Sci. Tokyo, XXVII, 1–27.

Shigeho Tanaka.

Anteliochimæra Tanaka, 1; orthotype A. chætirhamphus Tanaka.

2166. TOULD (1909). *Eine jungstiäre Fauna von Gatun am Panama-kanal.* Wien. Jahrb. Geol. Rechs. Anst., LVIII, 1908 (1909), 673–760.

Franz Tould.

Scaroides Toul, 687; orthotype S. gatunensis Tould.

2167. WAITE (1909). *Scientific Results of the New Zealand Government Trawling Expedition.* Rec. Canterbury Mus., I. (July, 1909.)

Edgar Ravenswood Waite.

Typhlonarke Waite, 16; orthotype Astrape aysoni Hamilton.
Arhynchobatis Waite, 20; orthotype A. asperrimus Waite.

2168. WEBER (1909). *Diagnosen neuer Fische der Siboga-Expedition.* Leiden; Notes Mus. Jentink, XXXI, 1909, 143–169.

Max Weber.

Rhabdamia Weber, 165; orthotype R. clupeiformis Weber.
Siphamia Weber, 168; orthotype S. tubifer Weber.

1910.

2169. BOULENGER (1910). *On a Large Collection of Fishes Made by Dr. W. J. Ansorge in the Quanza and Bengo Rivers, Angola.* Ann. Mag. Nat. Hist., VI. 1910, 537–561.

George Albert Boulenger.

Xenopomatichthys Boulenger, 542; orthotype X. ansorgii Boulenger.
Nematogobius Boulenger, 560; orthotype N. ansorgii Boulenger.

2170. CHAPMAN (1910). *A Study of the Batesford Limestone.* Proc. Roy. Soc. Vict. Melbourne, XX, 307.

Frederick Revans Chapman.

Metaceratodus Chapman, 25; orthotype Ceratodus wollastoni Chapman (fossil).

2171. COCKERELL (1910). *The Scales of the African Cyprinid Fishes, with a Discussion of Related Asiatic and European Species.* Proc. Biol. Soc. Wash., XXIII, 141–152.

Theodore Dru Alison Cockerell.

Acapoëta Cockerell, 149; orthotype VARICORHINUS TANGANICÆ Boulenger.

2172. COSSMAN (1910). *Rectifications de Nomenclature.* Revue Critique Paléozoologie, XIV, 74.

MAURICE COSSMAN.

Hussakofia Cossman, 74; orthotype DINICHTHYS MINOR Newberry (fossil). (ARTHRODIRE; Devonic, Ohio.) Substitute for BRACHYGNATHUS Hussakof, twice preoccupied.

2173. EIGENMANN (1910). *Catalogue and Bibliography of the Fresh-Water Fishes of Temperate and South Temperate America. (Rept. Princeton Univ. Expedition to Patagonia, 1896, 1899, III, Pt. 2)* Zoology, 375–511.

CARL H. EIGENMANN.

Megalonema Eigenmann, 383; orthotype M. PLATYCEPHALUM Eigenmann.

Hollandichthys Eigenmann, about 400; orthotype H. MULTIFASCIATUS Eigenmann & Norris.

2174. FOWLER (1910). *Notes on Batoid Fishes.* Proc. Acad. Nat. Sci. Phila., LXII, 1910, 468–475. (Aug. 17, 1910.)

HENRY WEED FOWLER.

Discotrygon Fowler, 468; orthotype DISCOBATIS MARGINIPINNIS Maclay & Macleay = RAIA LYMMA Forskål. A synonym of TÆNIURA M. & H. Name a substitute for DISCOBATIS Maclay & Macleay, regarded as preoccupied by DISCOBATUS.

Eunarce Fowler, 472; orthotype TORPEDO NARKE Risso.

Pteroplatytrygon Fowler, 474; orthotype TRYGON VIOLACEUM Bon.

2175. FOWLER (1910). *Descriptions of Four New Cyprinoids (Rhodeinæ).* Proc. Acad. Nat. Sci. Phila., LXII, 1910, 476–486. (Aug. 17, 1910.)

HENRY WEED FOWLER.

Rhodeops Fowler, 479; orthotype ACHEILOGNATHUS BREVIANALIS Fowler.

Hemigrammocypris Fowler, 483; orthotype H. RASBORELLA Fowler.

2176. FRAAS (1910). *Chimäridenreste aus dem oberen Lias von Holzmaden.* Stuttgart, Jahreshefte Ver. Natk., LXVI, 1910, 55–63.

OSCAR FRIEDRICH FRAAS.

Acanthorhina Fraas, 55; orthotype A. JAEKELI Fraas (fossil) (not ACANTHORHINUS Blainv.).

2177. FRANZ (1910). *Die Japanischen Knochfische der Sammlungen Haberer und Döflein. (Beiträge zur Naturgeschichte Ostasiens.)* Munchen Abh. Ak. Wiss. Math.-Phys. Kl. Suppl.-Bd., IV, 1910 (1911), Abh. 1, 1–135.

VIKTOR FRANZ.

Parabarbus Franz, 8; orthotype P. HABILIS Franz.

Cryptophthalmus Franz, 15; orthotype C. ROBUSTUS Franz. Name preoccupied; replaced by UNAGIUS Jordan, 1919.

Osteochromis Franz, 43; orthotype O. LARVATUS Franz.

Plagiopsetta Franz, 64; orthotype P. GLOSSA Franz.

Trypauchenophrys Franz, 68; orthotype T. ANOTUS Franz.

2178. GILBERT (1910) *Evesthes jordani, a Primitive Flounder from the Miocene of California.* Cal. Univ. Publ. Bull. Dept. Geol., V, 1910, 405-411.

JAMES ZACCHEUS GILBERT.

1911.

2194. BOULENGER (1911). *Descriptions of New African Cyprinodont Fishes.* Ann. Mag. Nat. Hist. (8), VIII, 260–268.

George Albert Boulenger.

Mohanga Boulenger, 261; orthotype Haplochilus tanganicanus Boulenger. Same as Lamprichthys Regan, a little later in the same year.

2195. BOULENGER (1911). *Catalogue of the Fresh-Water Fishes of Africa in the British Museum.* London, 1911, 1–529.

George Albert Boulenger.

Parauchenoglanis Boulenger, 364; orthotype Pimelodus guttatus Lönnberg. The name guttatus is preoccupied in Pimelodus.

2196. BOULENGER (1911). *On a Third Collection of Fishes Made by Dr. E. Bayon in Uganda, 1909–1910.* Genova Annal. Museo Civico. Ser. 3a, V, 1911, 64–78.

George Albert Boulenger.

Bayonia Boulenger, 70; orthotype B. xenodonta Boulenger.

2197. DEECKE (1911). *Paleontologische Betrachtungen.* IV. Ueber Fische. Neues. Jahrb. Mineral., II.

Johannes Ernest Wilhelm Deecke (1862–).

Perleidus Deecke, 70; orthotype P. altolepis Deecke (fossil).

2198. EIGENMANN (1911). *New Characins in the Collection of the Carnegie Museum.* Ann. Carnegie Mus., VIII, 1911, 164–181.

Carl H. Eigenmann.

Probolodus Eigenmann, 164; orthotype P. heterostomus Eigenmann.
Psalidodon Eigenmann, 165; orthotype P. gymnodontus Eigenmann.
Spintherobolus Eigenmann, 167; orthotype S. papilliferus Eigenmann.
Glandulocauda Eigenmann, 168; logotype G. melanogenys Eigenmann.
Hysteronotus Eigenmann, 171; orthotype H. megalostomus Eigenmann.
Vesicatrus Eigenmann, 174; orthotype V. tegatus Eigenmann.

2199. EIGENMANN (1911). *Descriptions of Two New Tetragonopterid Fishes in the British Museum.* Ann. Mag. Nat. Hist. (8), VII, 1911, 215–216.

Carl H. Eigenmann.

Nematobrycon Eigenmann, 215; orthotype N. palmeri Eigenmann.
Knodus Eigenmann, 216; orthotype K. meridæ Eigenmamn.

2200. ELLIS (1911). *On the Species of Hasemania, Hyphessobrycon, and Hemigrammus Collected by J. D. Haseman for the Carnegie Museum.* Ann. Carnegie Mus., VIII, 1911, 148–164.

Marian Lee Ellis.

Hasemania Ellis, 148; orthotype H. maxillaris Ellis.

2201. FOWLER (1911). *A New Albuloid Fish from Santo Domingo.* Proc. Acad. Nat. Sci. Phila., LXII, 1911, 651–654 (Jan. 27, 1911).

Henry Weed Fowler.

Dixonina Fowler, 651; orthotype D. nemoptera Fowler.

2202. FOWLER (1911). *Notes on Clupeoid Fishes.* Proc. Acad. Nat. Sci. Phila., LXIII, 1911, 204–211. (Apr. 6, 1911.)

Henry Weed Fowler.

Agonocottus Pavlenko, 23; orthotype A. CATAPHRACTUS Pavlenko.
Askoldia Pavlenko, 50; orthotype A. VARIEGATA Pavlenko.

2186. PREOBRAZHENSKII (1910). *Ueber einige Vertreter der Familie der Psammosteidæ Ag.* S. B. Naturf. Ges. Univ. Jurjew. (Dorpat) IX, 21–36. (Text in Russian.)

J. A. PREOBRAZHENSKII.

Pycnosteus Preobrazhenskii, 34; orthotype P. PALÆFORMIS Preobrazhenskii (fossil). An imperfect dorsal plate of a Devonian OSTRACOPHORE. Probably a synonym of PSAMMOSTEUS Ag.

Dyptychosteus Preobrazhenskii, 35; orthotype D. TESSELLATUS Preobrazhenskii (fossil) (not PSAMMOSTEUS TESSELLATUS Traquair). Probably same as PSAMMOSTEUS PARADOXUS. Dorsal plate of a Devonian OSTRACOPHORE. A synonym of PSAMMOSTEUS Ag.

2187. SAUVAGE (1910). *Bull. Carte Geol. Algérie, 1910.*

HENRI ÉMILE SAUVAGE.

Palæochromis Sauvage, 308; orthotype P. DORESTII Sauvage.

2188. STOLLEY (1910). *Ueber mesozoischen Fischotolithen aus Norddeutschland.* Jahresbericht des Niedersächsischen Geol. Vereins, III, 246–257. (Reprinted with separate pagination in Hannover, 1912.)

ERNST STOLLEY.

Archæotolithus Stolley, 248; orthotype OTOLITHUS BORNHOLMIENSIS Malling & Grönwall, 1909 (fossil). Otolith from Lias of Denmark.

2189. WAITE (1911). *Additions to the Fish Fauna of New Zealand.* Proc. New Zealand Inst., 1910, 25–26.

EDGAR RAVENSWOOD WAITE.

Maccullochia Waite, 25; orthotype HISTIOPTERUS LABIOSUS Gthr. A substitute for RICHARDSONIA Castelnau, preoccupied. A synonym of PARISTIOPTERUS Blkr., 1876.

2190. WAITE (1910). *Notes on New Zealand Fishes.* Trans. N. Zeal. Inst., XLII, 1910, 384–391.

EDGAR RAVENSWOOD WAITE.

Triareus Waite, 387; orthotype MAUROLICUS AUSTRALIS Hector.

2191. WEYMOUTH (1910). *Notes on a Collection of Fishes from Cameron, Louisiana.* Proc. U. S. Nat. Mus., XXXVIII.

FRANK WALTER WEYMOUTH.

Leptocerdale Weymouth, 142; orthotype L. LONGIPINNIS Weymouth.

2192. WOODWARD (1910). *On Some Permo-Carboniferous Fishes from Madagascar.* Ann. Mag. Nat. Hist., V, 1910, 1–6.

ARTHUR SMITH WOODWARD.

Ecrinesomus Woodward, 2; orthotype E. DIXONI Woodw. (fossil).

2193. WOODWARD (1910). *On a Fossil Sole and a Fossil Eel from the Eocene of Egypt.* Geol. Mag. London, VII, 1910, 402–405.

ARTHUR SMITH WOODWARD.

Mylomyrus Woodward, 404; orthotype M. FRANGENS Woodw. (fossil).

1911.

2194. BOULENGER (1911). *Descriptions of New African Cyprinodont Fishes.* Ann. Mag. Nat. Hist. (8), VIII, 260–268.

GEORGE ALBERT BOULENGER.

Mohanga Boulenger, 261; orthotype HAPLOCHILUS TANGANICANUS Boulenger. Same as LAMPRICHTHYS Regan, a little later in the same year.

2195. BOULENGER (1911). *Catalogue of the Fresh-Water Fishes of Africa in the British Museum.* London, 1911, 1–529.

GEORGE ALBERT BOULENGER.

Parauchenoglanis Boulenger, 364; orthotype PIMELODUS GUTTATUS Lönnberg. The name GUTTATUS is preoccupied in PIMELODUS.

2196. BOULENGER (1911). *On a Third Collection of Fishes Made by Dr. E. Bayon in Uganda, 1909–1910.* Genova Annal. Museo Civico. Ser. 3a, V, 1911, 64–78.

GEORGE ALBERT BOULENGER.

Bayonia Boulenger, 70; orthotype B. XENODONTA Boulenger.

2197. DEECKE (1911). *Paleontologische Betrachtungen.* IV. Ueber Fische. Neues. Jahrb. Mineral., II.

JOHANNES ERNEST WILHELM DEECKE (1862–).

Perleidus Deecke, 70; orthotype P. ALTOLEPIS Deecke (fossil).

2198. EIGENMANN (1911). *New Characins in the Collection of the Carnegie Museum.* Ann. Carnegie Mus., VIII, 1911, 164–181.

CARL H. EIGENMANN.

Probolodus Eigenmann, 164; orthotype P. HETEROSTOMUS Eigenmann.
Psalidodon Eigenmann, 165; orthotype P. GYMNODONTUS Eigenmann.
Spintherobolus Eigenmann, 167; orthotype S. PAPILLIFERUS Eigenmann.
Glandulocauda Eigenmann, 168; logotype G. MELANOGENYS Eigenmann.
Hysteronotus Eigenmann, 171; orthotype H. MEGALOSTOMUS Eigenmann.
Vesicatrus Eigenmann, 174; orthotype V. TEGATUS Eigenmann.

2199. EIGENMANN (1911). *Descriptions of Two New Tetragonopterid Fishes in the British Museum.* Ann. Mag. Nat. Hist. (8), VII, 1911, 215–216.

CARL H. EIGENMANN.

Nematobrycon Eigenmann, 215; orthotype N. PALMERI Eigenmann.
Knodus Eigenmann, 216; orthotype K. MERIDÆ Eigenmann.

2200. ELLIS (1911). *On the Species of Hasemania, Hyphessobrycon, and Hemigrammus Collected by J. D. Haseman for the Carnegie Museum.* Ann. Carnegie Mus., VIII, 1911, 148–164.

MARIAN LEE ELLIS.

Hasemania Ellis, 148; orthotype H. MAXILLARIS Ellis.

2201. FOWLER (1911). *A New Albuloid Fish from Santo Domingo.* Proc. Acad. Nat. Sci. Phila., LXII, 1911, 651–654 (Jan. 27, 1911).

HENRY WEED FOWLER.

Dixonina Fowler, 651; orthotype D. NEMOPTERA Fowler.

2202. FOWLER (1911). *Notes on Clupeoid Fishes.* Proc. Acad. Nat. Sci. Phila., LXIII, 1911, 204–211. (Apr. 6, 1911.)

HENRY WEED FOWLER.

Heringia Fowler, 207; orthotype CLUPEA AMAZONICA Steind.
Gudusia Fowler, 207; orthotype CLUPANODON CHAPRA Ham.
Anchoviella Fowler, 211; orthotype ENGRAULIS PERFASCIATUS Poey. A synonym of STOLEPHORUS Lac., as restricted by Blkr.

2203. FOWLER (1911). *Some Fishes from Venezuela.* Proc. Acad. Nat. Sci. Phila., LXIII, 1911, 419–437. (July 27, 1911.)
HENRY WEED FOWLER.

Apodastyanax Fowler, 422; orthotype A. STEWARDSONI Fowler.

2204. FOWLER (1911). *New Fresh-Water Fishes from Western Equador.* Proc. Acad. Nat. Sci. Phila., LXVIII, 1911, 493–520.
HENRY WEED FOWLER.

Rhoadsia Fowler, 497; orthotype R. ALTIPINNA Fowler.

2205. HASEMAN (1911). *Descriptions of Some New Species of Fishes, and Miscellaneous Notes on Others Obtained during the Expedition of the Carnegie Museum to Central South America.* Ann. Carneg. Mus., VII, 315–328.
JOHN D. HASEMAN.

Cephalosilurus Haseman, 317; orthotype C. FOWLERI Haseman.
Acestridium Haseman, 319; orthotype A. DISCUS Haseman.
Platysilurus Haseman, 320; orthotype P. BARBATUS Haseman.

2206. HASEMAN (1911). *Some New Species of Fishes from the Rio Iguassu.* Ann. Carnegie Mus., VII, 374–387.
JOHN D. HASEMAN.

Rhamdiopsis Haseman, 375; orthotype R. MOREIRAI Haseman.

2207. JORDAN & EVERMANN (1911). *A Review of the Salmonoid Fishes of the Great Lakes, with Notes on the White-Fishes of Other Regions.* Bull. U. S. Bureau of Fisheries for 1909 (1911), 1–41.
DAVID STARR JORDAN; BARTON WARREN EVERMANN.

Cisco Jordan & Evermann, 3; orthotype ARGYROSOMUS NIGRIPINNIS Gill.
Thrissomimus (Gill) Jordan & Evermann, 4; orthotype COREGONUS ARTEDI Le Sueur. Substitute for ARGYROSOMUS Ag., preoccupied.

2207A. JORDAN & THOMPSON (1911). *A Review of the Sciænoid Fishes of Japan.* Proc. U. S. Nat. Mus. for 1911 (Jan. 30), 241–261.
DAVID STARR JORDAN; WILLIAM FRANCIS THOMPSON.

Nibea Jordan & Thompson, 246; orthotype SCIÆNA MITSUKURII Jordan & Snyder.
Othonias Jordan & Thompson, 246; orthotype SCIÆNA MANCHURICA Jordan & Thompson.

2208. JORDAN & THOMPSON (1911). *A Review of the Families Lobotidæ and Lutianidæ Found in the Waters of Japan.* Proc. U. S. Nat. Mus., XXXIX, 435–471. (Jan. 30, 1911.)
DAVID STARR JORDAN; WILLIAM FRANCIS THOMPSON (1888–).

Etelinus Jordan & Thompson, 465; orthotype ETELIS MARSHI Jenkins.

2209. KENDALL & GOLDSBOROUGH (1911). *The Shore Fishes. (Reports on the Scientific Results of the Expedition to the Tropical Pacific in Charge of Alexander Agassiz, by the U. S. Fish Comm. Steamer "Albatross," from August, 1899, to March, 1900, Commander Jefferson F. Moser, U. S. N., Commanding, 13.)* Mem. Mus. Comp. Zool. Harvard Coll., XXVI, 1911, 239–344.
WILLIAM CONVERSE KENDALL; EDMUND LEE GOLDSBOROUGH.

Paragobioides Kendall & Goldsborough, 324; orthotype P. GRANDOCULIS Kendall & Goldsborough.

2210. KREYENBERG (1911). *Eine neue Cobitinen-Gattung aus China.* Zool. Anz., XXXVIII, 417–419.

M. KREYENBERG.

Gobiobotia Kreyenberg, 417; orthotype G. PAPPENHEIMI Kreyenberg.

2211. McCULLOCH (1911). *Report on the Fishes Obtained by the F. I. S. "Endeavour" on the Coast of New South Wales, Victoria, South Australia, and Tasmania. Part I. Zoological Results of the Fishing Experiments carried Out by the F. I. S. "Endeavour," 1909–1910,* I, 1911, 1–87.

ALLEN RIVERSTON McCULLOCH.

Austroberyx McCulloch, 39; orthotype BERYX AFFINIS Gthr. A synonym of TRACHICHTHODES Gilchrist.

2212. OGILBY (1911). *Description of New or Insufficiently Described Fishes from Queensland Waters.* Ann. Queensland Mus., X, 1911, 36–58.

JAMES DOUGLAS OGILBY.

Apistops Ogilby, 54; orthotype APISTUS CALOUNDRA De Vis.

Paratrigla Ogilby, 56; orthotype TRIGLA PLEURACANTHICA Ogilby.

2213. REGAN (1911). *The Anatomy and Classification of the Teleostean Fishes of the Orders Berycomorphi and Xenoberyces.* Ann. Mag. Nat. Hist. (8), VII, 1–9.

CHARLES TATE REGAN.

Caproberyx Regan, 8; orthotype BERYCOPSIS MAJOR Woodw. (fossil).

2214. REGAN (1911). *The Anatomy and Classification of the Teleostean Fishes of the Order Iniomi.* Ann. Mag. Nat. Hist. (8), VII, 120–133.

CHARLES TATE REGAN.

Hemipterois Regan, 126; orthotype BATHYPTEROIS GUENTHERI Alcock.

Bathysauropsis Regan, 126; orthotype CHLOROPHTHALMUS GRACILIS Gthr.

Parasudis Regan, 127; orthotype CHLOROPHTHALMUS TRUCULENTUS G. & B.

2215. REGAN (1911). *A Synopsis of the Marsipobranchs of the Order Hyperoartii.* Ann. Mag. Nat. Hist. (8), VII, 193–204.

CHARLES TATE REGAN.

Eudontomyzon Regan, 200; orthotype E. DANFORDI Regan.

2216. REGAN (1911). *The Classification of the Teleostean Fishes of the Order Synentognathi.* Ann. Mag. Nat. Hist. (8), VII, 327–335.

CHARLES TATE REGAN.

Lamprichthys Regan, 325; orthotype HAPLOCHILUS TANGANICANUS Boulenger. A synonym of MOHANGA Boulenger of a little earlier date.

Xenentodon Regan, 332; orthotype BELONE CANCILA Buchanan.

Xenopœcilus Regan, 374; orthotype HAPLOCHILUS SARASINORUM Popta.

2217. REGAN (1911). *The Classification of the Teleostean Fishes of the Order Ostariophysi. I. Cyprinoidea.* Ann. Mag. Nat. Hist. (8), VIII, 1911, 13–32.

CHARLES TATE REGAN.

Lepturichthys Regan, 31; orthotype HOMALOPTERA FIMBRIATA Gthr.

Hemimyzon Regan, 32; orthotype HOMALOPTERA FORMOSANA Boulenger.

2218. ROULE (1911). *(Certaines larves tiluriennes.)*

LOUIS ROULE (1861-).

Tiluropsis Roule, 329; orthotype a larval eel.

Tilurella Roule, 329; orthotype larval eel, not named in the Zoological Record.

2219. SNYDER (1911). *Descriptions of New Genera and Species of Fishes from Japan and the Riu Kiu Islands.* Proc. U. S. Nat. Mus., XL, 1911, 525–549. (May 26, 1911.)

JOHN OTTERBEIN SNYDER.

Jordanidia Snyder, 527; orthotype J. RAPTORIA Snyder.

Catalufa Snyder, 528; orthotype C. UMBRA Snyder.

Draculo Snyder, 545; orthotype D. MIRABILIS Snyder.

2220. STARKS & MANN (1911). *New and Rare Fishes from Southern California.* Univ. Calif. Pub. Zool., VIII, 9–19.

EDWIN CHAPIN STARKS; WILLIAM M. MANN.

Rusulus Starks & Mann, 14; orthotype R. SABURRÆ Starks & Mann.

Orthopnias Starks & Mann, 16; orthotype O. TRIACIS Starks & Mann.

2221. WAITE (1911). *Additions to the Fish Fauna of New Zealand, No. 2.* Proc. New Zealand Inst., 1910, 49–51. (June 24, 1911.)

EDGAR RAVENSWOOD WAITE.

Rexea Waite, 49; orthotype R. FURCIFERA Waite = GEMPYLUS SOLANDRI Cuv. & Val. A synonym of JORDANIDIA Snyder of slightly earlier date (May 26, 1911).

Pelotretis Waite, 50; orthotype P. FLAVILATUS Waite.

2222. ZUGMAYER (1911). *Poissons provenant des campagnes du yacht Princesse Alice.* Rés. Camp. Sci. Monaco, Fasc. 35, 1911, 1–159.

ERICH ZUGMAYER (1879-).

Asquamiceps Zugmayer, 10; orthotype A. VELARIS Zugmayer.

Nematostomias Zugmayer, 76; orthotype N. GLADIATOR Zugmayer.

Trichostomias Zugmayer, 78; orthotype T. VAILLANTI Zugmayer.

Poromitrella Zugmayer, 100; orthotype P. NIGRICEPS Zugmayer.

Platyberyx Zugmayer, 101; orthotype P. OPALESCENS Zugmayer.

Scopeloberyx Zugmayer, 103; orthotype S. OPERCULARIS Zugmayer.

Pachycara Zugmayer, 129; orthotype P. PLAGIOPHTHALMUS Zugmayer.

Barathrites Zugmayer, 132; orthotype B. IRIS Zugmayer.

Anotopterus Zugmayer, 138; orthotype A. PHARAO Zugmayer.

Benthalbella Zugmayer, 140; orthotype B. INFANS Zugmayer.

1912.

2223. BARBOUR (1912). *Two Preoccupied Names.* Proc. Biol. Soc. Washington. XXV, 1912, 121-126.

THOMAS BARBOUR.

Calliblennius Barbour, 187; orthotype ZACALLES BRYOPE Jordan & Snyder. Substitute for ZACALLES Jordan & Snyder, preoccupied.

2224. BEAN (1912). *Descriptions of New Fishes of Bermuda.* Proc. Biol. Soc. Washington, XXV, 1912, 121–126.

TARLETON HOFFMAN BEAN.

Eucrotus Bean, 123; orthotype E. VENTRALIS Bean.

Parasphyrænops Bean, 124; orthotype P. ATRIMANUS Bean.

2225. BEAUFORT (1912). *On Some New Gobiidæ from Ceram and Waigeu.* Zool. Anz., XXXIX, 1912, 136–143.

LIEVEN FERDINAND DE BEAUFORT.

Schismatogobius Beaufort, 139; orthotype S. BRUYNISI Beaufort.
Stiphodon (Weber), Beaufort, 143; orthotype SICYDIUM ELEGANS Steind.

2226. BERG (1912). *Faune de la Russie et des pays limitrophes. Poissons (Marsipobranchii et Pisces). Vol. III.* Pt. 1, 1–336, St. Petersberg.

LEW SEMENOWITCH BERG.

Pararutilus Berg, 43; orthotype LEUCISCUS FRISIO Nordman.
Acanthorutilus Berg, 42, 80; orthotype OREOLEUCISCUS DSAPCHYNENSIS Warpachowsky.
Hemiscaphirhynchus Berg, 309; orthotype PSEUDOSCAPHIRHYNCHUS KAUFMANNI Bogdanov.

2227. BOULENGER (1912). *Poissons recueillis dans la Région du Bas Congo par M. le Dr. W. J. Ansorge.* Ann. Mus. Congo, Bruxelles Zool., ser. 1, 2 fasc. 3, 1–25.

GEORGE ALBERT BOULENGER.

Ansorgia Boulenger, 17; orthotype A. VITTATA Boulenger.

2228. BURKE (1912). *A New Genus and Six New Species of the Family Cyclogasteridæ.* Proc. U. S. Nat. Mus., XLIII, 1912, 567–574.

CHARLES VICTOR BURKE.

Polypera Burke, 567; orthotype P. GREENI Burke.

2229. DUNCKER (1912). *Die Gattungen der Syngnathidæ.* Mett. Nat. Hist. Museum Hamburg, XXIX.

GEORG DUNCKER.

Acanthognathus Duncker, 228; orthotype SYNGNATHUS DACTYLOPHORUS Blkr.
Micrognathus Duncker, 235; orthotype SYNGNATHUS BREVIROSTRIS Rüppell.

2230. EIGENMANN (1912). *The Fresh-Water Fishes of British Guiana, including a Study of the Ecological Grouping of Species, and the Relation of the Fauna of the Plateau to that of the Lowlands.* Mem. Carnegie Mus., V, 1–578.

CARL H. EIGENMANN.

Chamaigenes Eigenmann, 120; orthotype ASPREDO FILAMENTOSUS Cuv. & Val.
Agmus Eigenmann, 128; orthotype A. LYRIFORMIS Eigenmann.
Megalonema Eigenmann, 150; orthotype M. PLATYCEPHALUM Eigenmann.
Microglanis Eigenmann, 155; orthotype M. PŒCILUS Eigenmann.
Brachyglanis Eigenmann, 156; orthotype B. FRENATA Eigenmann.
Leptoglanis Eigenmann, 158; orthotype L. ESSEQUIBENSIS Eigenmann.
Myoglanis Eigenmann, 159; orthotype M. PATAROËNSIS Eigenmann.
Chasmocranus Eigenmann, 160; orthotype C. LONGIOR Eigenmann.
Tympanopleura Eigenmann, 203; orthotype T. PIPERATA Eigenmann.
Ochmacanthus Eigenmann, 213; orthotype O. FLABELLIFER Eigenmann.
Lithoxus Eigenmann, 242; orthotype L. LITHOIDES Eigenmann.
Bivibranchia Eigenmann, 258; orthotype B. PROCTRACTILA Eigenmann.
Tylobranchus Eigenmann, 271; orthotype T. MACULOSUS Eigenmann.
Aphyodite Eigenmann, 314; orthotype A. GRAMMICA Eigenmann.

Acanthocharax Eigenmann, 405; orthotype A. MICROLEPIS Eigenmann.
Heterocharax Eigenmann, 406; orthotype H. MACROLEPIS Eigenmann.
Gymnorhamphichthys Eigenmann, 436; orthotype G. HYPOSOMUS Eigenmann.
Porotergus Eigenmann, 441; orthotype P. GYMNOTUS Eigenmann.
Rhinosardinia Eigenmann, 445; orthotype R. SERRATA Eigenmann = CLUPEA AMAZONICA Steind. A synonym of HERINGIA Fowler, 1911.
Acarichthys Eigenmann, 500; orthotype ACARA HECKELII M. & T.
Soleonasus Eigenmann, 528; orthotype S. FINIS Eigenmann.

2231. EIGENMANN (1912). *Some Results of An Ichthyological Reconnaissance of Colombia, South America.* Indiana Univ. Studies, 1912, No. 8, 1–27.

CARL H. EIGENMANN.

Xiliphius Eigenmann, 10; orthotype X. MAGDALENÆ Eigenmann.
Parastremma Eigenmann, 20; orthotype P. SADINA Eigenmann.
Genycharax Eigenmann, 22; orthotype G. TARPON Eigenmann.
Gephyrocharax Eigenmann, 24; orthotype G. CHOCOËNSIS Eigenmann.

2232. FOWLER (1912). *Descriptions of Nine New Eels, with Notes on Other Species.* Proc. Acad. Nat. Sci. Phila., LXIV, 1912, 8–33.

HENRY WEED FOWLER.

Microconger Fowler, 9; orthotype LEPTOCEPHALUS CAUDALIS Fowler.
Ahynnodontophis Fowler, 25; orthotype GYMNOTHORAX STIGMANOTUS Fowler.

2233. GARMAN (1912). *Some Chinese Vertebrates. Pisces.* Mem. Comp. Zool. Harvard Coll., XL, 111–123.

SAMUEL GARMAN.

Ageneiogarra Garman, 114; orthotype GARRA IMBERBA Garman.
Myloleuciscus Garman, 116; orthotype M. ATRIPINNIS Garman.
Coripareius Garman, 120; orthotype C. CETOPSIS Garman.

2234. GILBERT & BURKE (1912). *Fishes from the Bering Sea and Kamchatka.* Bull. Bur. Fish., XXX (1910), 1912, 31–96.

CHARLES HENRY GILBERT; CHARLES VICTOR BURKE (1882–).

Archaulus Gilbert & Burke, 36; orthotype ARCHAULUS BISERIATUS Gilbert & Burke.
Thyriscus Gilbert & Burke, 43; orthotype T. ANOPLUS Gilbert & Burke.
Eurymen Gilbert & Burke, 64; orthotype E. GYRINUS Gilbert & Burke.
Elassodiscus Gilbert & Burke, 81; orthotype E. TREMEBUNDUS Gilbert & Burke.
Nectoliparis Gilbert & Burke, 82; orthotype N. PELAGICUS Gilbert & Burke.
Acantholiparis Gilbert & Burke, 83; orthotype A. OPERCULARIS Gilbert & Burke.
Gymnoclinus Gilbert & Burke, 86; orthotype G. CRISTULATUS Gilbert & Burke.
Alectridium Gilbert & Burke, 88; orthotype A. AURANTIACUM Gilbert & Burke.

2235. GILBERT & BURKE (1912). *New Cyclogasterid Fishes from Japan.* Proc. U. S. Nat. Mus., XLII, 1912, 351–380.

CHARLES HENRY GILBERT; CHARLES VICTOR BURKE.

Ateleobrachium Gilbert & Burke, 97; orthotype A. PTEROTUM Gilbert & Burke.

2236. JORDAN (1912). *Note on the Generic Name Safole, replacing Boulengerina for a Genus of Kuhliid Fishes.* Proc. U. S. Nat. Mus., XLII, 1912, 655. (August 29, 1912.)

DAVID STARR JORDAN.

Safole Jordan, 655; orthotype DULES TÆNIURUS Cuv. & Val. Substitute for BOULENGERINA Fowler, preoccupied.

2237. JORDAN & THOMPSON (1912). *A Review of the Sparidæ and Related Families of Perch-like Fishes Found in the Waters of Japan.* Proc. U. S. Nat. Mus., XLI. (Jan. 22, 1912.)

David Starr Jordan; William Francis Thompson.

Lethrinichthys Jordan & Thompson, 558; orthotype Lethrinus nematacanthus Blkr.

Taius Jordan & Thompson, 570; orthotype Chrysophrys tumifrons T. & S.

Evynnis Jordan & Thompson, 573; orthotype Sparus cardinalis Lac.

2238. McCULLOCH (1912). *Notes on Some Australian Atherinidæ.* Proc. Roy. Soc. Queensland, XXIV, 1912, 47–53.

Allan Riverston McCulloch.

Craterocephalus McCulloch, 48; orthotype C. fluviatilis McCulloch.

2239. McCULLOCH (1912). *Notes on Some Western Australian Fishes.* Rec. W. Austral. Mus., Perth 1, 1912, 78–97.

Allan Riverston McCulloch.

Mucogobius McCulloch, 93; orthotype Gobius mucosus Gthr. A synonym of Callogobius Blkr.

2240. MEEK (1912). *New Species of Fishes from Costa Rica.* Pub. Field Col. Mus., X.

Seth Eugene Meek.

Alfaro Meek, 72; orthotype A. acutiventralis Meek. A substitute for Petalosoma Regan, preoccupied.

2241. PELLÉGRIN (1912). *Poissons des côtes de l'Angola; Mission de M. Gruvel.* Bull. Soc. Zool. France, XXXVII.

Jacques Pellégrin.

Diagrammella Pellégrin, 295; orthotype Diagramma macrops Pellégrin.

2242. RADCLIFFE (1912). *Descriptions of Fifteen New Fishes of the Family Cheilodipteridæ, from the Philippine Islands and Contiguous Waters.* Proc. U. S. Nat. Mus., XLI, 431–446. (Jan. 31, 1912.)

Lewis Radcliffe.

Amioides Smith & Radcliffe, 440; orthotype Amia grossidens Smith & Radcliffe.

Neamia Smith & Radcliffe, 441; orthotype N. octospina Smith & Radcliffe.

2243. RADCLIFFE (1912). *New Pediculate Fishes from the Philippine Islands and Contiguous Waters.* Proc. U. S. Nat. Mus., XLII, 199–214. (April 30, 1912.)

Lewis Radcliffe.

Dermatias Radcliffe, 206; orthotype D. platynogaster Radcliffe.

2244. RADCLIFFE (1912). *Description of a New Family, Two New Genera and Twenty-nine New Species of Anacanthine Fishes from the Philippine Islands and Contiguous Waters.* Proc. U. S. Nat. Mus., XLIII, 105–140. (Sept. 27, 1912.)

Lewis Radcliffe.

Parateleopus Smith & Radcliffe, 139; orthotype P. microstomus Smith & Radcliffe.

Macrouroides Smith & Radcliffe, 139; orthotype M. inflaticeps Smith & Radcliffe.

2245. REGAN (1912). *New Fishes from Aldabra and Assumption, Collected by Mr. J. C. F. Fryer.* Trans. Linn. Soc. London, XV, 1912, 301–302.

CHARLES TATE REGAN.

Xenoconger Regan, 301; orthotype X. FRYERI Regan.
Parioglossus Regan, 302; orthotype P. TÆNIATUS Regan.

2246. REGAN (1912). *The Classification of the Blennioid Fishes.* Ann. Mag. Nat. Hist. (8), X, 265–280.

CHARLES TATE REGAN.

Acanthoplesiops Regan, 266; orthotype ACANTHOCLINUS INDICUS Day.

2247. REGAN (1912). *The Classification of the Teleostean Fishes of the Order Pediculati.* Ann. Mag. Nat. Hist. (8), IX, 1912, 277–289.

CHARLES TATE REGAN.

Haplophryne Regan, 289; orthotype ACERATIAS MOLLIS Brauer.

2248. REGAN (1912). *The Anatomy and Classification of the Symbranchoid Eels.* Ann. Mag. Nat. Hist. (8), IX, 387–390.

CHARLES TATE REGAN.

Macrotrema Regan, 390; orthotype SYMBRANCHUS CALIGANS Cantor.

2249. REGAN (1912). *Description of Two New Eels from West Africa, Belonging to a New Genus and Family.* Ann. Mag. Nat. Hist., X.

CHARLES TATE REGAN.

Heterenchelys Regan, 323; orthotype H. MICROPHTHALMUS Regan.

2250. REGAN (1912). *A Revision of the Pœciliid Fishes of the Genera Rivulus, Pterolebias and Cynolebias.* Ann. Mag. Nat. Hist. (8), X, 1912, 494–508.

CHARLES TATE REGAN.

Petalurichthys Regan, 494; orthotype PETALOSOMA CULTRATUS Regan. Substitute for PETALOSOMA Regan, preoccupied in COLEOPTERA; a synonym of ALFARO Meek.

2251. REGAN (1912). *Sexual Differences in the Pœciliid Fishes of the Genus Cynolebias.* Ann. Mag. Nat. Hist. (8), X, 641–652.

CHARLES TATE REGAN.

Cynopœcilus Regan, 642; orthotype CYNOLEBIAS MELANOTÆNIA Regan.

2252. RIBEIRO (1912). *Fauna Brasiliense. Peixes 4 (A).* Arch. Mus. Rio de Janeiro, XVI, 1912, 1–504.

ALIPIO DE MIRANDA RIBEIRO.

Parasturisoma Ribeiro, 109; orthotype LORICARIA BREVIROSTRIS Eigenmann.
Mormyrostoma Ribeiro, 192; orthotype SILURUS CARINATUS L.
Tatia Ribeiro, 360; orthotype CENTROMOCHLUS INTERMEDIUS Steind.

2253. RIBEIRO (1912). *Loricariidæ, Callichthyidæ, Doradidæ e Trichomycteridæ. Commissaõ de Linhas Telegraphicas Estrategicas de Matto-Grosso ao Amazonas.* Annexo No. 5, Rio Janeiro, 1912, 1–31.

ALIPIO DE MIRANDA RIBEIRO.

Gyrinurus Ribeiro, 27; orthotype G. BATRACHOSTOMA Ribeiro (Sept., 1912). A synonym of OCHMACANTHUS Eigenmann, June, 1912.
Paravandellia Ribeiro, 28; orthotype P. OXYPTERA Ribeiro.

2254. SMITH (1912). *Description of a New Notidanoid Shark from the Philippine Islands, Representing a New Family.* Proc. U. S. Nat. Mus., XLI, 489–491. (February 8, 1912.)

HUGH McCORMICK SMITH.

Pentanchus Smith, 489; orthotype P. PROFUNDICOLUS Smith.

2255. SMITH (1912). *The Squaloid Sharks of the Philippine Archipelago, with Descriptions of New Genera and Species.* Proc. U. S. Nat. Mus., XLI, 677–685. (February 9, 1912.)

HUGH McCORMICK SMITH.

Nasisqualus Smith, 681; orthotype N. PROFUNDORUM Smith.

Squaliolus Smith, 684; orthotype S. LATICAUDUS Smith.

2256. SMITH & RADCLIFFE (1912). *Description of a New Family of Pediculate Fishes from Celebes.* Proc. U. S. Nat. Mus., XLII, 579–582. (Aug. 30. 1912.)

HUGH McCORMICK SMITH; LEWIS RADCLIFFE.

Thaumatichthys Smith & Radcliffe, 579; orthotype T. PAGIDOSTOMUS Smith & Radcliffe.

2257. SNYDER (1912). *The Fishes of the Streams Tributary to Monterey Bay.* Bull. U. S. Bur. Fish., XXXII, 47–72.

JOHN OTTERBEIN SNYDER.

Hesperoleucus Snyder, 63; orthotype POGONICHTHYS SYMMETRICUS Grd.

2258. TANAKA (1912). *Figures and Descriptions of Fishes of Japan.* Tokyo, V–X, 71–186.

SHIGEHO TANAKA.

Cyclolumpus Tanaka, 86; orthotype C. ASPERRIMUS Tanaka.

Heteroscymnus Tanaka, 102; orthotype H. LONGUS Tanaka.

Cirrhigaleus Tanaka, 151; orthotype C. BARBIFER Tanaka.

Calliscyllium Tanaka, 171; orthotype C. VENUSTUM Tanaka.

2259. ZUGMAYER (1912). *On a New Genus of Cyprinoid Fishes from High Asia.* Ann. Mag. Nat. Hist. (8), IX, 1912, 682.

ERICH ZUGMAYER.

Aspiopsis Zugmayer, 682; orthotype A. MERZBACHERI Zugmayer.

1913.

2260. BERG (1913). *A Review of the Clupeoid Fishes of the Caspian Sea, etc.* Ann. Mag. Nat. Hist., XI, 472–480.

LEO SEMENOWITCH BERG.

Clupeonella Berg, 472; orthotype C. CASPIA Berg. Not CLUPEONELLA Kessler; replaced by CASPIALOSA Berg.

2261. BROOM (1913). *On Some Fishes from Lower and Middle Karroo, South Africa.* Ann. S. Afr. Mus. Cape Town, XII, 1913, 1–5.

ROBERT BROOM.

Caruichthys Broom, 4; orthotype C. ORNATUS Broom (fossil).

2262. BROOM (1913). *On Some Fossil Fishes from the Diamond-Bearing Pipes of Kimberley.* Trans. Roy. Soc., S. Afr. III, 1913, 399–402.

ROBERT BROOM.

Disichthys Broom, 400; orthotype D. KIMBERLEYENSIS Broom (fossil). (PALÆONISCID.)

Pelichthys Broom, 401; orthotype P. KIMBERLEYENSIS Broom (fossil). (PALÆONISCID, S. Africa.)

2263. CHAPMAN (1913). *Note on the Occurrence of the Cainozoic Shark, Carcharoides, in Victoria.* Victoria Naturalist, XXX, 142–193.

FREDERICK REVANS CHAPMAN.

Carcharoides Chapman, 142; orthotype a fossil shark.

2264. CHAUDHURI (1913). *Zoological Results of the Abor Expedition, 1911–12.* XVIII. Fish Rec. Ind. Mus. Calcutta, VIII, 1913, 243–257.

BONAWARI LAL CHAUDHURI.

Aborichthys Chaudhuri, 245; orthotype A. KEMPI Chaudhuri.

2265. COCKERELL (1913). *Observations on Fish Scales.* Bull. Bureau of Fisheries, XXII (for 1912), Oct. 13, 1913.

THEODORE DRU ALLISON COCKERELL.

Myloleucops Cockerell, 136 (foot note); type LEUCISCUS ÆTHIOPS Basilewsky. A substitute for MYLOLEUCUS Gthr., preoccupied.

2266. EIGENMANN (1913). *Some Results from an Ichthyological Reconnaissance of Colombia, South America.* Pt. II, Indiana Univ. Studies, 1913, No. 18, 1–32.

CARL H. EIGENMANN.

Pterobrycon Eigenmann, 3; orthotype P. LANDONI Eigenmann.

Argopleura Eigenmann, 10; orthotype BRYCONAMERICUS MAGDALENÆ Eigenmann.

Zygogaster Eigenmann, 22; orthotype Z. FILIFER Eigenmann.

Microgenys Eigenmann, 22; orthotype M. MINUTUS Eigenmann.

2267. ELLIS (1913). *The Gymnotid Eels of Tropical America.* Mem. Carneg. Mus. VI, 1913, 109–195.

MAX MAPES ELLIS.

Orthosternarchus Ellis, 144; orthotype STERNARCHUS TEMANDUA Boulenger.

Odontosternarchus Ellis, 155; orthotype STERNARCHUS SACHSI Peters.

2268. ELLIS (1913). *The Plated Nematognaths.* Mem. Carneg. Mus., VIII, 1913, 384–413.

MARIAN LEE ELLIS.

Cascadura Ellis, 387; orthotype C. MACULOCEPHALA Ellis.

2269. FOWLER (1913). *Curimatus spilurus Cope, a wrongly identified Characin.* Proc. Acad. Nat. Sci. Phila., LXV, 1913, 673–675.

HENRY WEED FOWLER.

Xyrocharax Fowler, 673; orthotype CURIMATUS STIGMATURUS Fowler.

2270. FOWLER (1913). *Notes on Catostomoid Fishes.* Proc. Acad. Nat. Sci. Phila., LXV, 1913, 45–60.

HENRY WEED FOWLER.

Megastomatobus Fowler, 45; orthotype SCLEROGNATHUS CYPRINELLA Cuv. & Val. A synonym of SCLEROGNATHUS as restricted by Günther & Jordan. The first species named under SCLEROGNATHUS, however, was a CARPIODES.

Notolepidomyzon Fowler, 47; orthotype PANTOSTEUS ARIZONÆ (Gilbert).
Scartomyzon Fowler, 59; orthotype PTYCHOSTOMUS CERVINUS Cope.
Pithecomyzon Fowler, 54; orthotype CHASMISTES CUJUS Cope.

2271. FOWLER (1913). *Fishes from the Madeira River, Brazil.* Proc. Acad. Nat. Sci. Phila., LXV., 1913, 517–579.

HENRY WEED FOWLER.

Prionobrama Fowler, 553; orthotype P. MADEIRÆ Fowler.
Gnathocharax Fowler, 561; orthotype G. STEINDACHNERI Fowler.
Tyttocharax Fowler, 564; orthotype T. MADEIRÆ Fowler.

2272. FOWLER (1913). *Fowlerina Eigenmann, a Preoccupied Generic Name.* Science, XXXVIII, 1913, 51.

HENRY WEED FOWLER.

Ephippicharax Fowler, 51; orthotype TETRAGONOPTERUS COMPRESSUS Gthr. A substitute for FOWLERINA Eigenmann, preoccupied.

2273. GARMAN (1913). *The Plagiostomia (Sharks, Skates, and Rays).* Mem. Mus. Comp. Zool. Harvard Coll., XXXVI, 1913, 1–528.

SAMUEL GARMAN.

Vulpecula (Valmont) Garman, 31; orthotype VULPECULA MARINA (Valmont) Garman = SQUALUS VULPINUS Bonnaterre = SQUALUS VULPES Gmelin. Same as ALOPIAS Raf. and of earlier date, but Valmont's names are of doubtful validity.
Catulus (Valmont) Garman, 71; orthotype CATULUS VULGARIS Valmont = SQUALUS CATULUS L. Name preoccupied by CATULUS Kniphof, 1759, a genus of HEMIPTERA. Same as SCYLLIORHINUS Blainv.
Apristurus Garman, 96; orthotype SCYLLIORHINUS INDICUS Brauer.
Atelomycterus Garman, 100; orthotype SCYLLIUM MARMORATUM Bennett.
Haploblepharus Garman, 101; orthotype SCYLLIUM EDWARDSII (Cuv.) Voigt.
Zanobatus Garman, 291; orthotype PLATYRHINA SCHŒNLEINI M. & H.
Urobatis Garman, 401; orthotype LEIOBATUS SLOANI Blainv.
Pteromylæus Garman, 437; logotype MYLIOBATIS ASPERRIMUS J. & E.

2274. HOLT & BYRNE (1913). *Sixth Report on the Fishes of the Irish Atlantic Slope. The Families Stomiatidæ, Sternoptychidæ, and Salmonidæ.* Dublin Fish Ireland Sci. Invest., 1913, 1–27.

ERNEST W. L. HOLT; L. W. BYRNE.

Lamprotoxus Holt & Bryne, 2; orthotype L. FLAGELLIBARBA Holt & Byrne.

2275. JORDAN (1913). *Ellimma, a Genus of Fossil Herrings.* Proc. Biol. Soc. Washington, XXVI, 1913, 79.

DAVID STARR JORDAN.

Ellimma Jordan, 79; orthotype ELLIPES BRANNERI Jordan (fossil). Substitute for ELLIPES Jordan, preoccupied.

2276. JORDAN & METZ (1913). *A Catalogue of the Fishes Known from the Waters of Korea.* Mem. Carnegie Mus., VI, 1913, 1–65.

DAVID STARR JORDAN; CHARLES WILLIAM METZ (1889–).

Zunasia Jordan & Metz, 7; orthotype PRISTIGASTER CHINENSIS, Basilewsky, the young of ILISHA ELONGATA Gray. A synonym of ILISHA Gray.

2277. JORDAN & THOMPSON (1913). *Notes on a Collection of Fishes from the Island of Shikoku in Japan, with a Description of a New Species, Gnathypops iyonis.* Proc. U. S. Nat. Mus., XLVI, 65–72.

DAVID STARR JORDAN; WILLIAM FRANCIS THOMPSON.

Onigocia Jordan & Thompson, 70; orthotype PLATYCEPHALUS MACROLEPIS Blkr.
Inegocia Jordan & Thompson, 70; orthotype PLATYCEPHALUS JAPONICUS Krusenstern.

2278. LAHILLE (1913). *Nota sobre siete peces de las costas argentinas.* An. Mus. Nac. Buenos Aires, XXIV, 1913, 1-24.

FERNANDO LAHILLE.

Besnardia Lahille, 1; orthotype B. GYRINOPS Lahille.

2279. LANGER (1913). *Beiträge zur Morphologie der viviparen Cyprinodontiden.* Morph. Jahrb. Leipzig, XLVII, 1913, 193-307.

W. F. LANGER.

Gulapinnus Langer, 207; orthotype CNESTERODON DECEMMACULATUS Garman.

2279A. LERICHE (1913). *Les poissons paléocènes de Landana (Congo).* Ann. du Musée du Congo Belge. Geol. Paleont. Mineral., ser. 3, I, 69-80.

MAURICE LERICHE.

Hypolophites Leriche; orthotype H. MAYOMBENSIS Leriche (fossil shark).

2280. OGILBY (1913). *Edible Fishes of Queensland: I. Pempheridæ; II. Gadopsiform Percoids.* Mem. Queensland Mus. (Dec. 10, 1913).

JAMES DOUGLAS OGILBY.

Liopempheris Ogilby, 61; orthotype PEMPHERIS MULTIRADIATA Klunzinger; near CATALUFA Snyder, 1911; perhaps a synonym.

2281. PELLÉGRIN (1913). *Poisson des côtes de Mauritanie. Mission de M. Gruvel.* Paris Bull. Soc. Zool., XXXVIII, 1913, 116-118.

JACQUES PELLÉGRIN.

Panturichthys Pellégrin, 118; orthotype P. MAURITANICUS Pellégrin.

2282. PELLÉGRIN (1913). *Poissons nouveaux de Guinée Française recueillis par M. Pobéguin.* Bull. Soc. Zool. Paris, XXXVIII, 1913, 236-241.

JACQUES PELLÉGRIN.

Diagrammella Pellégrin, 295; orthotype DIAGRAMMA MACROPS Pellégrin.

2283. PELLÉGRIN (1913). *Sur un nouveau genre de Centrarchidés du Gabon.* Comptes Rendus Acad. Roy. 26, 1913, 1488-1489.

JACQUES PELLÉGRIN.

Parakuhlia Pellégrin, 1489; orthotype P. BOULENGERI Pellégrin.

2284. RADCLIFFE (1913). *Descriptions of Seven New Genera and Thirty-one New Species of Fishes of the Families Brotulidæ and Carapidæ from the Philippine Islands and the Dutch East Indies.* Proc. U. S. Nat. Mus., XLIV, 135-176.

LEWIS RADCLIFFE.

Homostolus Radcliffe, 147; orthotype H. ACER Radcliffe.
Enchelybrotula Radcliffe, 154; orthotype E. PAUCIDENS Radcliffe.
Mastigopterus Radcliffe, 159; orthotype M. IMPERATOR Radcliffe.
Hypopleuron Radcliffe, 164; orthotype H. CANINUM Radcliffe.
Luciobrotula Radcliffe, 170; orthotype L. BARTSCHI Radcliffe.
Xenobythites Radcliffe, 173; orthotype X. ARMIGER Radcliffe.
Pyramodon Radcliffe, 175; orthotype P. VENTRALIS Radcliffe.

2285. REGAN (1913). *The Antarctic Fishes of the Scottish National Antarctic Expedition.* Edinburgh Trans. Roy. Soc. 49, 1913, 229–292.

CHARLES TATE REGAN.

Eugnathosaurus Regan, 234; orthotype E. VORAX Regan.
Ophthalmolycus Regan, 243; orthotype LYCODES MACROPS Gthr.
Austrolycichthys Regan, 244; orthotype LYCODES BRACHYCEPHALUS Pappenheim.
Austrolycus Regan, 245; orthotype A. DEPRESSICEPS Regan.
Crossolycus Regan, 247; orthotype LYCODES FIMBRIATUS Steind.
Pagetopsis Regan, 286; orthotype CHAMPSOCEPHALUS MACROPTERUS Boulenger.
Chænocephalus Regan, 287; orthotype C. ACERATUS Regan.

2286. REGAN (1913). *The Classification of the Percoid Fishes.* Ann. Mag. Nat. Hist., XII, 1913, 111–115.

CHARLES TATE REGAN.

Centrodraco Regan, 145; orthotype DRACONETTA ACANTHOPOMA Regan.

2287. REGAN (1913). *Fishes from the River Ucayali, Peru, Collected by W. Mounsey.* Ann. Mag. Nat. Hist., XII, 1913, 281–283.

CHARLES TATE REGAN.

Apistogramma Regan, 282; orthotype HETEROGRAMMA BORELLI Regan. A substitute for HETEROGRAMMA Regan, preoccupied.

2288. REGAN (1913). *The Fishes of the San Juan River, Colombia.* Ann. Mag. Nat. Hist., XII, 1913, 462–473.

CHARLES TATE REGAN.

Xenurocharax Regan, 463; orthotype X. SPURRELLI Regan.
Nannorhamdia Regan, 467; orthotype N. SPURRELLI Regan.

2289. REGAN (1913). *Phallostethus dunckeri, a Remarkable New Cyprinodont Fish from Johore.* Ann. Mag. Nat. Hist. XII, 1913, 548–555.

CHARLES TATE REGAN.

Phallostethus Regan, 548; orthotype P. DUNCKERI Regan.

2290. REGAN (1913). *A Collection of Fishes Made by Professor Francisco Fuentes at Easter Island.* Proc. Zool. Soc. London, 1913, 368–374.

CHARLES TATE REGAN.

Girellops Regan, 369; orthotype GIRELLA NEBULOSA Kendall & Radcliffe.

2291. REGAN (1913). *A Revision of the Cyprinodont Fishes of the Sub-Family Pœciliinæ.* Proc. Zool. Soc. London. 1913, 977–1018.

CHARLES TATE REGAN.

Priapichthys Regan, 991; orthotype GAMBUSIA ANNECTENS Regan.
Priapella Regan, 992; orthotype GAMBUSIA BONITA Meek.
Pseudopœcilia Regan, 995; orthotype PŒCILIA FESTÆ Boulenger.
Pœcilopsis Regan, 997; orthotype P. ISTHMENSIS Regan.
Brachyrhaphis Regan, 997; orthotype GAMBUSIA RHABDOPHORA Regan.
Leptorhaphis Regan, 998; orthotype GAMBUSIA INFANS Woolman.
Pamphoria Regan, 1003; orthotype CNESTERODON SCALPRIDENS Garman.
Pamphorichthys Regan, 1003; orthotype HETERANDRIA MINOR Garman.

2292. RIBEIRO (1913). *Fauna Brasiliense. Peixes.* V (part). *Serranidæ* (39 pp.), *Hæmulidæ* (30 pp.), *and Sciænidæ* (46 pp.). Arch. Mus. Rio de Janeiro, XVII, 1913.

ALIPIO DE MIRANDA RIBEIRO.

Symphysoglyphus Ribeiro, 43; orthotype OTOLITHUS BAIRDI Steind.

2293. ROULE (1913). *Deuxième Expédition Antarctique Française.* Poissons, 1913, 1–25.

LOUIS ROULE.

Dolloidraco Roule, 15; orthotype D. LONGIDORSALIS Roule.

2294. ROULE (1913). *Étude sur les formes larvaires Tiluriennes de poissons apodes.* Ann. Inst. Ocean. Monaco, VI, f. 2, 1913, 1–23.

LOUIS ROULE.

Grimaldichthys Roule, 2; orthotype G. PROFUNDISSIMUS Roule.

2295. SMITH (1913). *The Hemiscylliid Sharks of the Philippine Archipelago, with Description of a New Genus from the China Sea. (Scientific Results of the Philippine Cruise of the Fisheries Steamer "Albatross," 1907–1910. No. 28.)* Proc. U. S. Nat. Mus., XLV, 567–569.

HUGH MCCORMICK SMITH.

Cirrhoscyllium Smith, 568; orthotype C. EXPOLITUM Smith.

2296–2297. SMITH (1913). *Description of a New Carcharioid Shark from the Sulu Archipelago.* Proc. U. S. Nat. Mus., XLV, 1913, 599–601.

HUGH MCCORMICK SMITH.

Eridacnis Smith, 599; orthotype E. RADCLIFFEI Smith.

2298. STARKS (1913). *The Fishes of the Stanford Expedition to Brazil.* Stanford Univ. Publ., University Series, 1913, 1–77.

EDWIN CHAPIN STARKS.

Platypogon Starks, 29; orthotype P. CÆRULIROSTRIS Starks.

2299. WEBER (1913). *Résultats de l'expédition scientifique néerlandaise à la Nouvelle-Guinée.* Nova Guinea, IX, 513–613.

MAX WEBER.

Oloplotosus Weber, 521; orthotype O. MARIÆ Weber.
Porochilus Weber, 523; orthotype P. OBBESI Weber.
Doiichthys Weber, 532; orthotype D. NOVÆ-GUINEÆ Weber.
Tetranesodon Weber, 545; orthotype T. CONORHYNCHUS Weber.

2300. WEBER (1913). *Siboga-Expeditie. Die Fische der Siboga-Expedition.* Leiden, 1–710.

MAX WEBER.

Ceromitus Weber, 54; orthotype C. FLAGELLIFER Weber.
Promacheon Weber, 84; orthotype P. SIBOGÆ Weber.
Apterygocampus Weber, 116; orthotype A. EPINNULATUS Weber.
Odontonema Weber, 148; orthotype O. KERBERTI Weber.
Leiogaster Weber, 179; orthotype L. MELANOPUS Weber.
Pteranthias Weber, 209; orthotype P. LONGIMANUS Weber.
Sphenanthias Weber, 210; orthotype S. SIBOGÆ Weber.
Nematochromis Weber, 265; orthotype N. ANNÆ Weber.
Cheiloprion Weber, 342; orthotype POMACENTRUS LABIATUS Day.
Cyttula Weber, 411; orthotype C. MACROPS Weber.
Lepidoblepharon Weber, 421; orthotype L. OPHTHALMOLEPIS Weber.
Liopteryx Weber, 423; orthotype BRACHYPLEURA XANTHOSTICTA Alcock.
Pleurosicya Weber, 456; orthotype P. BOLDINGHI Weber.
Tydemania Weber, 570; orthotype T. NAVIGATORIS Weber.

2301. WEBER (1913). *Neue Beiträge zur Kenntniss der Süsswasserfische von Celebes.** Amster. Bijdr. Dierk., 1913, 197–213.

MAX WEBER.

Adrianichthys Weber, 204; orthotype A. KRUYTI Weber.

2302. ZUGMAYER (1913). *Diagnoses des Stomiatidés provenant des campagnes du Yacht "Hirondelle II," 1911–1912.* Bull. Institut. Océanographique. Monaco, 1913.

ERICH ZUGMAYER.

Aristostomias Zugmayer, 1; orthotype A. GRIMALDII Zugmayer.

1914.

2303. BERG (1914). *Faune de la Russie et des Pays limitropes.* Bull. Acad. Imp. Sci. Petrograd. *Poissons, Marsipobranchii et Pisces.* Tome III, Ostariophysi, Livraison 2, 1914.

LEO SEMENOVICH BERG.

Chilogobio Berg, 488; orthotype C. SOLDATOVI Berg.
Pseudogobiops Berg, 500; orthotype GOBIO RIVULARIS Basilewsky.
Leucalburnus Berg, 5, 521; orthotype L. SATURNINI Berg.

2304. BOGOLIUBOV (1914). *Étude sur le Paracymatodus Traut.* Ann Géol. Univérs. Novo Aleksandrija, XVI, 197–199.

H. H. BOGOLIUBOV.

Paracymatodus Bogoliubov, 197; orthotype CYMATODUS RECLINATUS Trautschold.

2305. BOULENGER (1914). *Mission Stappers au Tanganika-Moero. Diagnoses de poissons nouveaux. 1. Acanthopterygiens, Opisthomes, Cyprinodontes.* Rev. Zool. Afr. Bruxelles, III, 1914, 442–447.

GEORGE ALBERT BOULENGER.

Luciolates Boulenger, 443; orthotype L. STAPPERSII Boulenger.
Stappersia Boulenger, 445; orthotype S. SINGULARIS Boulenger.

2306. BOULENGER (1914). *Cichlidæ.* Wissensch. Ergebniss. Deutsch. Zentral. Afrika-Exped., 1907–1908, V, Zool. III, 1914, 253–259.

GEORGE ALBERT BOULENGER.

Schubotzia Boulenger, 258; orthotype S. EDUARDINA Boulenger.

2307. BRANSON (1914). *The Devonian Fishes of Missouri.* Bull. Univ. Missouri. Science, II, 59–74.

EDWIN BAYER BRANSON.

Eoörodus Branson, 68; orthotype E. TYPUS Branson (fossil: shark-tooth).

2308. EASTMAN (1914). *Catalog of the Fossil Fishes in the Carnegie Museum.* Pt. II. Supplement to the *Catalog of Fishes from the Upper Eocene of Monte Bolca.* Mem. Carneg. Mus., VI, No. 5, 315–348.

CHARLES ROCHESTER EASTMAN.

Eobothus Eastman, 328; orthotype RHOMBUS MINIMUS Ag. (fossil flounder).
Eolabroides Eastman, 336; orthotype CRENILABRUS SZANOCHÆ Zigno (fossil labroid).
Gillidia Eastman, 345; orthotype TOXOTES ANTIQUUS Ag. (fossil).

---

* Reise von E. C. Abendanon.

2309. EASTMAN (1914). *Catalogue of the Fossil Fishes in the Carnegie Museum, IV.* Descriptive catalogue of the fossil fishes from the Lithographic Stone of Solenhofen, Bavaria. Mem. Carneg. Mus., VI, 1914, 389–449.

CHARLES ROCHESTER EASTMAN.

Parathrissops Eastman, 417; orthotype P. FURCATUS Eastman (fossil LEPTOLEPIDÆ, Jurassic, Solenhofen).

2310. EIGENMANN (1914). *Some Results from Studies of South American Fishes.* Indiana Univ. Bull., XII, 1914, 20–48.

CARL H. EIGENMANN.

Bleptonema Eigenmann, 44; orthotype B. PARAGUAYENSIS Eigenmann. A synonym of PRIONOBRAMA Eigenmann.

Parecbasis Eigenmann, 45; orthotype P. CYCLOLEPIS Eigenmann.

2311. EIGENMANN, HENN, AND WILSON. (1914). *New Fishes from Western Colombia, Equador and Peru.* Indiana Univ. Studies, XIX, 1914, 1–15.

CARL H. EIGENMANN; ARTHUR WILBUR HENN; CHARLES WILSON.

Landonia Eigenmann & Henn, 1; orthotype L. LATIDENS Eigenmann & Henn.

Phanagoniates Eigenmann & Henn, 2; orthotype P. WILSONI Eigenmann & Henn. Misprinted elsewhere as PHENAGONIATES.

Microbrycon Eigenmann, Henn & Wilson, 3; orthotype M. MINUTUS Eigenmann Henn & Wilson.

Ceratobranchia Eigenmann, Henn & Wilson, 4; orthotype C. OBTUSIROSTRIS Eigenmann, Henn & Wilson.

2312. FACCIOLÀ (1914). *Su di un nuovo tipo del Nettastomidi.* Roma, Bull. Soc. Zool. Ital. (3), III, 1914, 39–47.

LUIGI FACCIOLÀ.

Nettastomella Facciolà, 47; orthotype N. PHYSONEMA Facciolà.

2313. FOWLER (1914). *Fishes from the Rupununi River, British Guiana.* Proc. Acad. Nat. Sci. Phila., LXVI, 229–284.

HENRY WEED FOWLER.

Myocharax Fowler, 239; orthotype LEPORINUS DESMOTES Fowler.

Xiphocharax Fowler, 251; orthotype X. OGILVIEI Fowler.

Cobitiglanis Fowler, 268; orthotype OCHMACANTHUS TAXISTIGMA Fowler. A synonym of HENONEMUS Eigenmann & Ward.

Stoniella Fowler, 271; orthotype S. LEOPARDUS Fowler.

2314. JORDAN & THOMPSON (1914). *Record of the Fishes Obtained in Japan in 1911.* Mem. Carneg. Mus. VI, 1914, 205–313.

DAVID STARR JORDAN; WILLIAM FRANCIS THOMPSON.

Tanakia Jordan & Thompson, 230; orthotype RHODEUS ORYZÆ Jordan & Thompson.

Ectenias Jordan & Thompson, 241; orthotype E. BRUNNEUS Jordan & Thompson.

Icticus Jordan & Thompson, 242; orthotype I. ISCHANUS Jordan & Thompson.

Franzia Jordan & Thompson, 251; orthotype ANTHIAS NOBILIS Franz.

Calymmichthys Jordan & Thompson, 296; orthotype C. XENICUS Jordan & Thompson.

Spectrunculus Jordan & Thompson, 301; orthotype S. RADCLIFFEI Jordan & Thompson.

Tarphops Jordan & Thompson, 307; orthotype PSEUDORHOMBUS OLIGOLEPIS Blkr.

2315. McCULLOCH (1914). *Notes on Some Australian Pipe-Fishes.* Australian Zoologist, I, pt. 1, 1914, 29–31.

ALLAN RIVERSTON McCULLOCH.

Histiogamphelus McCulloch, 30; orthotype H. BRIGGSI McCulloch.

2316. McCULLOCH (1914). *Report on Some Fishes Obtained by the F. I. S. "Endeavour" on the Coast of Queensland, New South Wales, Victoria, Tasmania, South and South Western Australia.* Part II. Biol. Res. "Endeavour," II, Pt. 3, 77–165.

ALLAN RIVERSTON MCCULLOCH.

Vinculum McCulloch, 110; orthotype CHÆTODON SEXFASCIATUS Rich.
Allocyttus McCulloch, 114; orthotype CYTTOSOMA VERRUCOSUM Gilchrist.

2317. MEEK (1914). *An Annoted List of Fishes Known To Occur in the Fresh Waters of Costa Rica.* Field Museum, Nat. Hist. Pub. Zool., Ser. X, 1914, 101–134.

SETH EUGENE MEEK.

Carlia Meek, 108; orthotype CHEIRODON EIGENMANNI Meek.

2318. OGILBY (1914). *(Ptenonotus.)* Ann. Queensland Museum, XXII.

JAMES DOUGLAS OGILBY.

Ptenonotus Ogilby, 13; orthotype EXOCŒTUS CIRRIGER Peters.

2319. PAPPENHEIM (1914). *Die Tiefseefische.* Südpol-Expedition. 1901–1903, XV, Zoologie, VI, 1914, 163–200.

KARL PAPPENHEIM.

Gnathostomias Pappenheim, 172; orthotype G. LONGIFILIS Pappenheim.
Neoceratias Pappenheim, 198; orthotype N. SPINIFER Pappenheim.

2320. REGAN (1914). *Diagnoses of New Marine Fishes Collected by the British Antarctic ("Terra Nova") Expedition.* Ann. Mag. Nat. Hist. XIII, 1914, 11–17.

CHARLES TATE REGAN.

Prinodraco Regan, 10; orthotype P. EVANSI Regan.
Pogonophryne Regan, 13; orthotype P. SCOTTI Regan.
Chænodraco Regan, 14; orthotype C. WILSONI Regan.
Serranops Regan, 15; orthotype S. MACULICAUDA Regan.
Cynophidium Regan, 16; orthotype C. PUNCTATUM Regan.
Lepidoperca Regan, 17; orthotype L. INORNATA Regan.

2321. REGAN (1914). *Note on Aristeus goldiei Macleay, and on Some Other Fishes from New Guinea.* Proc. Zool. Soc. London, 1914, 339–340.

CHARLES TATE REGAN.

Rhombosoma Regan, 339; orthotype NEMATOCENTRIS NOVÆ-GUINEÆ Weber = ARISTEUS GOLDIEI Macleay.

2322. REGAN (1914). *Report on the Fresh-Water Fishes Collected by the British Ornithologists' Union Expedition in Dutch New Guinea.* Trans. Zool. Soc. London, 1914, XX, 275–286.

CHARLES TATE REGAN.

Rhadinocentrus Regan, 280; orthotype R. ORNATUS Regan.
Anisocentrus Regan, 281; orthotype NEMATOCENTRIS RUBROSTRIATUS Weber.
Chilatherina Regan, 282; orthotype RHOMBATRACTUS FASCIATUS Weber.

2323. REGAN (1914). *Two New Cyprinid Fishes from Waziristan, Collected by Major G. E. Bruce.* Ann. Mag. Nat. Hist. XIII, 1914, 261–263.

CHARLES TATE REGAN.

Schizocypris Regan, 262; orthotype S. BRUCEI Regan.

2324. REGAN (1914). *Descriptions of Two New Cyprinodont Fishes from Mexico, Presented to the British Museum by Herr A. Rachow.* Ann. Mag. Nat. Hist., XIV, 1914, 65–67.

CHARLES TATE REGAN.

Heterophallus Regan, 66; orthotype H. RACHOVII Regan.

2325. REGAN (1914). *A Synopsis of the Fishes of the Family Macrorhamphosidæ.* Ann. Mag. Nat. Hist., XIII, 1914, 17–21.

CHARLES TATE REGAN.

Notopogon Regan, 14; logotype N. SCHOTELI Regan.
Scolopacichthys Regan, 21; orthotype CENTRISCUS ARMATUS Sauvage.

2326. REGAN (1914). *British Antarctic ("Terra Nova") Expedition.* Zoology, I, Fishes, 1914, 1–54.

CHARLES TATE REGAN.

Histiodraco Regan, 9; orthotype DOLLOIDRACO VELIFER Regan.
Pyramodon Regan, 20; orthotype CYNOPHIDIUM PUNCTATUM Regan.

2327. ZUGMAYER (1914.) *Diagnoses de quelques poissons nouveaux provenant des campagnes du yacht Hirondelle II (1911–1913).* Bull. Inst. Ocean. Monaco. 1914, No. 2888, 1–4.

ERICH ZUGMAYER.

Cetostoma Zugmayer, 3; orthotype C. REGANI Zugmayer.
Zoarcites Zugmayer, 3; orthotype Z. PARDALIS Zugmayer.

1915.

2328. BAMBER (1915). *Reports on the Marine Biology of the Sudanese Red Sea, from Collections Made by Cyril Crossland, etc.* XXII. *The Fishes.* Journ. Linn. Soc. London, XXXI, 1915, 477–485.

R. C. BAMBER.

Neenchelys Bamber, 479; orthotype N. MICROTRETUS Bamber.

2329. BERG (1915). *Compte-Rendu préliminaire sur les harénges collectionnés dans la mer Caspienne par l'Expédition Caspienne de l'Année, 1913.* Mat. Pozn. Russk. Rybolav, IV, No. 6, pp. 1–8.

LEW SEMENOVICH BERG.

Caspialosa Berg, 12; orthotype CLUPEONELLA CASPIA Berg. A substitute for CLUPEONELLA Berg; not of Kessler.

2330. BERG (1915). *Faune de la Russie.* Poissons, III, Pt. 2, 337–704.

LEW SEMENOWITCH BERG.

Chilogobio Berg. 490; orthotype C. CZERSKII Berg.

2331. EIGENMANN (1915). *The Cheilodontinæ, a Subfamily of Minute Characid Fishes of South America.* Mem. Carneg. Mus., VII, No. 1, 1–99.

CARL H. EIGENMANN.

Leptobrycon Eigenmann, 46; orthotype L. JUTUARANÆ Eigenmann.
Macropsobrycon Eigenmann, 48; orthotype M. URUGUAYANÆ Eigenmann.
Megalamphodus Eigenmann, 49; orthotype M. MEGALOPTERUS Eigenmann.
Microschemobrycon Eigenmann, 56; orthotype M. GUAPORENSIS Eigenmann.
Oligobrycon Eigenmann, 57; orthotype O. MICROSTOMUS Eigenmann.

Aphyocheirodon Eigenmann, 58; orthotype A. HEMIGRAMMUS Eigenmann.
Compsura Eigenmann, 60; orthotype C. HETERURA Eigenmann.
Mixobrycon Eigenmann, 62; orthotype CHEIRODON RIBEIROI Eigenmann.

2332. EIGENMANN (1915). *The Serrasalminæ and Mylinæ.* Ann. Carneg. Mus., IX, 1915, 226–272.

CARL H. EIGENMANN.

Gastropristis Eigenmann, 238; orthotype SERRASALMO TERNETZI Steind.
Rooseveltiella Eigenmann, 240; orthotype SERRASALMO NATTERERI Kner.
Pristobrycon Eigenmann, 245; orthotype SERRASALMO CALMONI Steind.

2333. FOWLER (1915). *Notes on Nematognathous Fishes.* Proc. Acad. Nat. Sci. Phila., LXVII, 223–243.

HENRY WEED FOWLER.

Cataphractops Fowler, 231; orthotype CALLICHTHYS MELAMPTERUS Cope.
Diapaletoplites Fowler, 237; orthotype HYPOPTOPOMA GULARE Cope.

2334. GILBERT (1915). *Fishes Collected by the United States Steamer "Albatross" in Southern California in 1904.* Proc. U. S. Nat. Mus., XLVIII, 305–380.

CHARLES HENRY GILBERT.

Xenognathus Gilbert, 311; orthotype X. PROFUNDORUM Gilbert.
Zastomias Gilbert, 322; orthotype Z. SCINTILLANS Gilbert.
Asterotheca Gilbert, 343; orthotype XENOCHIRUS PENTACANTHUS Gilbert.
Lipariscus Gilbert, 358; orthotype L. NANUS Gilbert.
Lycogramma Gilbert, 364; orthotype MAYNEA BRUNNEA Bean.
Monoceratias Gilbert, 379; orthotype M. ACANTHIAS Gilbert.

2335. HUBBS (1915). *Flounders and Soles from Japan Collected by the United States Bureau of Fisheries Steamer "Albatross" in 1906.* Proc. U. S. Nat. Mus., XLVIII, 449–496.

CARL L. HUBBS (1894–).

Citharoides Hubbs, 453; orthotype C. MACROLEPIDOTUS Hubbs.
Psettina Hubbs, 456; orthotype ENGYPROSOPON IIJIMÆ Jordan & Starks.
Læoptichthys Hubbs, 460; orthotype L. FRAGILIS Hubbs.
Gareus Hubbs, 486; orthotype PLEURONECTES OBSCURUS Herzenstein.

2336. McCULLOCH (1915). *Notes on and Descriptions of Australian Fishes.* Proc. Linn. Soc. New S. Wales, XL, 259–277.

ALLAN RIVERSTON McCULLOCH.

Lovettia McCulloch, 259; orthotype HAPLOCHITON SEALII Johnston.

2337. McCULLOCH (1915). *Notes and Illustrations of Queensland Fishes.* Mem. Queensland Mus., III, 1915, 47–56.

ALLAN RIVERSTON McCULLOCH.

Belonepterygion McCulloch, 51; orthotype ACANTHOCLINUS FASCIOLATUS Ogilby.

2338. McCULLOCH (1915). *Report on Some Fishes Obtained by the F. I. S. "Endeavour" on the Coast of Queensland, New South Wales, Victoria, Tasmania, South and South Western Australia,* Part III. Biol. Res. "Endeavour" 3, Pt. III, 97–170.

ALLAN RIVERSTON McCULLOCH.

Acanthopegasus McCulloch, 106; orthotype PEGASUS LANCIFER Kaup.

2339. McCULLOCH & WAITE (1915). *A Revision of the Genus Aracana and Its Allies.* Trans. Roy. Soc. Austral., XXXIX, 1915, 477–493.

ALLAN RIVERSTON McCULLOCH; EDGAR RAVENSWOOD WAITE.

Caprichthys McCulloch & Waite, 482; orthotype C. GYMNURA McCulloch & Waite.

2340. OGILBY (1915). *On Some New or Little Known Australian Fishes.* Mem. Queensland Mus., III, 1915, 117–129.

JAMES DOUGLAS OGILBY.

Reganichthys Ogilby, 123; orthotype R. MAGNIFICUS Ogilby. A synonym of GLAUCOSOMA T. & S.

Rhizoprion Ogilby, 132; orthotype CARCHARIAS CRENIDENS Klunzinger.

2341. PELLÉGRIN (1915). *Les poissons du bassin de l'Ogoué.* Comptes Rend. Ass. France. Adv. Science, XLIII, 500–505.

JACQUES PELLÉGRIN.

Hemistichodus Pellégrin, 500; orthotype H. VAILLANTI Pellégrin.

2342. RIBEIRO (1915). *Fauna Brasiliense, Peixes (Eleutherobranchios aspirophoros).* Archivos do Museo Nacional do Rio Janeiro, XVII, 1915. (In this large volume each family has a separate pagination.)

ALIPIO DE MIRANDA RIBEIRO.

Kronia Ribeiro (ATHERINIDÆ), 9; orthotype K. IGUAPENSIS Ribeiro.

Pseudothyrina Ribeiro (ATHERINIDÆ), 11; orthotype P. JHERINGI Ribeiro.

Toledia Ribeiro (STROMATEIDÆ), 5; orthotype T. MACROPHTHALMA Ribeiro.

Davidia Ribeiro (BALISTIDÆ), 9; orthotype ALUTERA PUNCTATA Ag. Not DAVIDIUS Selys, 1878, in NEUROPTERA, being named for a different person, David Starr Jordan.

Pseudomulloides Ribeiro (MULLIDÆ), 4; orthotype P. CARMINEUS Ribeiro.

Marcgravichthys Ribeiro (BATRACHOIDIDÆ), 3; orthotype BATRACHUS CRYPTOCENTRUS Cuv. & Val. Substitute for MARCGRAVIA Jordan, 1886, for the inadequate reason of the use of the name in botany. But both are synonyms of AMPHICHTHYS Sw., 1839.

Parablennius Ribeiro (BLENNIIDÆ), 3; orthotype BLENNIUS PILICORNIS Cuv. & Val.

2343–2344. ROULE (1915). *Sur un nouveau genre de poissons apodes et sur quelques particularités de la biologie de ces êtres.* C. R. Acad. Sci., 160, 1915, 283–284.

LOUIS ROULE.

Pseudophichthys Roule, 283; orthotype P. LATIDORSALIS Roule.

2345. SILVESTER (1915). *Fishes New to the Fauna of Porto Rico.* Washington, Carnegie Inst. Year Book, 14, 1915, 214–217.

CHARLES F. SILVESTER.

Mayerina Silvester, 214; orthotype M. MAYERI Silvester.

2346. SOLDATOV & PAVLENKO (1915). *Two New Genera of Cottidæ from Tartar Strait and Okhotsk Sea.* Ann. Mus. Zool. Ac. Sci. Petrograd, XX, 1915.

V. K. SOLDATOV; M. N. PAVLENKO.

Taurocottus Soldatov & Pavlenko, 149; orthotype T. BERGI Soldatov & Pavlenko.

Trichocottus Soldatov & Pavlenko, 151; orthotype T. BRASHNIKOVI Soldatov & Pavlenko.

2347. STEINDACHNER (1915). *Beiträge zur kenntniss der Flussfische Sudamenkas.* Denks. Kais. Ak. Wiss. Wien, V, 1915.

FRANZ STEINDACHNER.

Æquidens Steindachner, 34; orthotype Tetragonopterus passlii Steind. Name preoccupied by Æquidens Eigenmann & Bray.

Pseudepterus Steindachner, 82; orthotype Auchenipterus hasemani Steind.

2348. TANAKA (1915). *Ten New Species of Japanese Fishes.* (Text in Japanese). Tokyo Zool. Mag. XXVII, 1915, 556–568.

Shigeho Tanaka.

Kanekonia Tanaka, 556; orthotype K. florida Tanaka. (In Japanese, Nov. 15, 1915; English version Nov. 28, 1918).

Asterorhombus Tanaka, 567; orthotype A. stellifer Tanaka.

Scidorhombus Tanaka, 567; orthotype S. pallidus Tanaka.

Lubricogobius Tanaka, 567; orthotype L. exiguus Tanaka.

Henicichthys Tanaka, 568; orthotype H. foraminosus Tanaka.

Leptoscolopsis Tanaka, XIX; orthotype L. nagasakiensis Tanaka.

2349. WOODWARD (1915). *The Fossil Fishes of the English Wealden and Purbeck Formations,* I, 1–48. London Mon. Palaeont. Soc.

Arthur Smith Woodward.

Hylæobatis Woodward, 19; orthotype H. problematica Woodw. (fossil) (Myliobatidæ).

1916.

2350. BERG (1916). *Les poissons des eaux douces de la Russie.* Moscow. (In Russian.) 1–563.

Lew Semenovich Berg.

Leucalburnus Berg, 292; orthotype Phoxinus satunini Berg.

Acanthalburnus Berg, 299; orthotype Alburnus punctulatus Kessler.

Capoëtobrama Berg, 316; orthotype Acanthobrama kuschakewitschi Kessler.

2351. BOGOLIUBOV (1916). (Russian Title.) *Sur l'ichthyodorulite du Polyrhizus concavus Trd. de Miatchkovo.* Gouv. de Moscou Ann. Geol. Miner. Novo Alexandrija, XVI.

N. N. Bogoliubov.

Paracymatodus Bogoliubov, 197; orthotype Cymatodus reclinatus Trautschold (fossil) (Petalodontidæ). Substitute for Cymatodus Trautschold (not of Newberry), preoccupied.

2352. BOULENGER (1916). *Catalogue of the Fresh-water Fishes of East Africa.*

George Albert Boulenger.

Otoperca Boulenger, 130; orthotype Larimus auritus Cuv. & Val. A synonym of Brachydeuterus Gill.

Lobochilotes Boulenger, 280; orthotype Tilapia labiata Boulenger.

Liauchenoglanis Boulenger, 314; orthotype L. maculatus Boulenger.

Champsochromis Boulenger, 433; orthotype C. cærulea Boulenger.

2353. EIGENMANN (1916). *New and Rare Fishes from South American Rivers.* Ann. Carnegie Mus., X.

Carl H. Eigenmann.

Cetopsorhamdia Eigenmann, 83; orthotype C. nasus Eigenmann.

2354. EIGENMANN (1916). *On Apareiodon, a New Genus of Characid Fishes.* Ann. Carnegie Museum, X.

Carl H. Eigenmann.

Apareiodon Eigenmann, 71; orthotype PARODON PIRACICABÆ Eigenmann.

2355. FOWLER (1916). *Notes on Fishes of the Orders Haplomi and Microcyprini.* Proc. Ac. Nat. Sci. Phila., LXVIII.

HENRY WEED FOWLER.

Galasaccus Fowler, 417; orthotype HYDRARGYRA SIMILIS Baird & Grd. A substitute for HYDRARGYRA as commonly used, HYDRARGYRA SWAMPINA Lac. being a true FUNDULUS.

Chriopeops Fowler, 425; orthotype LUCANIA GOODEI Jordan.

Oxzygonectes Fowler, 425; orthotype HAPLOCHILUS DOWI Gthr.

2356. GILBERT & HUBBS (1916). *Report on the Japanese Macruroid Fishes Collected by the United States Fisheries Steamer "Albatross" in 1901, with a Synopsis of the Genera.* Proc. U. S. Nat. Mus., LI, 135–214.

CHARLES HENRY GILBERT; CARL LEAVITT HUBBS.

Squalogadus Gilbert & Hubbs, 156; orthotype S. MODIFICATUS Gilbert & Hubbs.

2357. HENN (1916). *On Various South American Pœciliid Fishes.* Ann. Carnegie Mus., X, pp. 93–142.

ARTHUR WILBUR HENN.

Diphyacantha Henn, 113; orthotype D. CHOCOËNSIS Henn.

Neoheterandria Henn, 117; orthotype N. ELEGANS Henn.

Phalloptychus Henn, 121; orthotype P. EIGENMANNI Henn. N. gen. ?

Phallatorhynus Henn, 126; orthotype P. FASCIOLATUS Henn.

2358. HUBBS (1916). *Notes on the Marine Fishes of California.* Univ. of California Pub. in Zoology, XVI, 1916, 153–169.

CARL LEAVITT HUBBS.

Lestidiops Hubbs, 154; orthotype L. SPHYRÆNOPSIS Hubbs.

2359. JORDAN (1916). *The Nomenclature of American Fishes as Affected by the Opinions of the International Commission on Zoological Nomenclature.* Copeia (April 12, 1916).

DAVID STARR JORDAN.

Sufflamen Jordan, 27; orthotype BALISTES CAPISTRATUS Shaw. Substitute for PACHYNATHUS Sw., preoccupied in Spiders as PACHYGNATHUS.

2360. McCULLOCH (1916). *Ichythyological Items.* Mem. Queensland Mus., V (July 10, 1916).

ALLAN RIVERSTON McCULLOCH.

Phyllichthys McCulloch, 67; orthotype P. PUNCTATUS McCulloch.

2361. MEEK & HILDEBRAND (1916). *The Fishes of the Fresh Waters of Panama.* Field Museum of Natural History, No. 191; X, Dec. 28, 1916.

SETH EUGENE MEEK; SAMUEL F. HILDEBRAND.

Leptoancistrus Meek & Hildebrand, 254; orthotype ACANTHICUS CANENSIS Meek & Hildebrand.

Pseudocheirodon Meek & Hildebrand, 275; orthotype P. AFFINIS Meek & Hildebrand.

Leptophilypnus Meek & Hildebrand, 361; orthotype L. FLUVIATILIS Meek & Hildebrand.

Microeleotris Meek & Hildebrand, 362; orthotype M. AFFINIS Meek and Hildebrand.

Hemieleotris Meek & Hildebrand, 364; orthotype ELEOTRIS LATIFASCIATUS Meek & Hildebrand.

2362. OGILBY (1916). *Check List of the Cephalochordates, Selachians and Fishes of Queensland,* Part 1. Mem. Queensl. Mus., 1916.

JAMES DOUGLAS OGILBY.

Dasybatus (Klein; Walbaum) Ogilby, 87; orthotype RAJAPASTINACA L. Same as DASYATIS Raf. The names reproduced by Walbaum from Klein are rejected by the International Commission.

Cestracion (Walbaum after Klein) Ogilby, 81; orthotype SQUALUS ZYGÆNA L. The generic names quoted by Walbaum in 1792 from Klein are rejected by the International Commission.

2363. OGILBY (1916). *(Læpichthys.)* Mem. Queensland Mus., V.

JAMES DOUGLAS OGILBY.

Læphichthys Ogilby, 173; orthotype ACANTHURUS ROSTRATUS Gthr.

2364. REGAN (1916). *A Revision of the Clupeoid Fishes of the Genera Pomolobus. Brevoortia and Dorosoma and Their Allies.* Ann. Mag. Nat. Hist., 1916, 297 et seq.

CHARLES TATE REGAN.

Paralosa Regan, 167; orthotype ALOSA KANAGURTA Blkr. Name said to be preoccupied (PARALOSA Blkr.), replaced by HILSA Regan, 1916. But I do not find a PARALOSA in Bleeker's writings.

Ethmalosa Regan, 302; orthotype ALAUSA DORSALIS Cuv. & Val.

Hilsa Regan, 303; logotype ALOSA KANAGURTA Blkr. Substitute for PARALOSA Regan, said to be preoccupied.

Nematalosa Regan, 312; orthotype CLUPEA NASUS Bloch.

Gonialosa Regan, 315; orthotype CHATOËSSUS MODESTUS Day.

2365. REGAN (1916). *The Morphology of the Cyprinodont fishes of the subfamily Phallostethinæ,* etc. Proc. Zool. Soc. London.

CHARLES TATE REGAN.

Neostethus Regan, 14; logotype N. LANKESTERI Regan.

2366. RIBEIRO (1916). *Fauna Brasiliensis, Peixes, V.* Archiv. Museu Nacional, XVII. Mullidæ.

ALIPIO DE MIRANDA RIBEIRO.

Pseudomulloides Ribeiro, 3; orthotype P. CARMINEUS Ribeiro.

2367. ROULE (1916). *Notice préliminaire sur quelques espèces nouvelles provenant des croisières de S. A. S. le Prince de Monaco.* Bull. Inst. Oceanographique Monaco.

LOUIS ROULE.

Belonopterois Roule, 13; orthotype B. VIRIDENSIS Roule.

Barathrites Roule, 17; orthotype B. ABYSSORUM Roule.

Echinomacrurus Roule, 22; orthotype E. MOLLIS Roule.

Bathysolea Roule, 28; orthotype B. ALBIDA Roule.

2368. TANAKA (1916). *Nihon san gyorui no san shinshu (Three New Species of Japanese Fish).* Dobuts. Z. Tokyo, XXVII.

SHIGEHO TANAKA.

Paragyrops Tanaka, 141; orthotype P. EDITA Tanaka.

Pluviopsetta Tanaka, 141; orthotype P. TANIGUCHI Tanaka.

2369. TANAKA (1916). *Nihon san gyorui no shi shinshu (Two New Species of Japanese Fishes).* Dobuts. Z. Tokyo, XXVIII.

SHIGEHO TANAKA.

Brevigobio Tanaka, 102; orthotype B. KAWABATÆ Tanaka.

2370. THOMPSON (1916). *Fishes Collected by the United States Bureau of Fisheries Steamer "Albatross" during 1888, between Montevideo, Uruguay, and Tome, Chile, on the Voyage Through the Straits of Magellan.* Proc. U. S. Nat. Mus. L. (May 20, 1916).

WILLIAM FRANCIS THOMPSON.

Ethmidium Thompson, 458; orthotype CLUPEA NOTACANTHOIDES Steind. = ALAUSA MACULATA Cuv. & Val.

2371. WAITE (1916). *Fishes, Australasian Antarctic Expedition.* Sci. Rep.

EDGAR RAVENSWOOD WAITE.

Aconichthys Waite, 30; orthotype A. HARRISSONI Waite.

Cygnodraco Waite, 32; orthotype C. MAWSONI Waite.

Dacodraco Waite, 35; type D. HUNTERI Waite.

Notosudis Waite, 56; orthotype N. HAMILTONI Waite.

Aurion Waite, 63; orthotype A. EFFULGENS Waite.

2372. WATSON & DAY (1916). *Notes on Some Palæozoic Fishes.* Mem. Lit. Phil. Doc. Manchester, LX.

DAVID MEREDITH SEARES WATSON; HENRY DAY.

Pentlandia Watson & Day, 34; orthotype DIPTERUS MACROPTERUS Traquair (fossil).

2373. WEBER & BEAUFORT (1916). *The Fishes of the Indo-Australian Archipelago, III, Ostariophysi, Apodes, Synbranchi.*

MAX WEBER; LIEVEN FERDINAND DE BEAUFORT.

Brachydanio Weber & Beaufort, 85; orthotype DANIO ALBOLINEATA Blyth.

Lissochilus Weber & Beaufort, 167; logotype L. SUMATRANUS Weber & Beaufort.

Hemerorhinus Weber & Beaufort, 281; orthotype SPHAGEBRANCHUS HEYNINGI Weber.

Cheiloprion Weber, 342; orthotype POMACENTRUS LABIATUS Day.

2374. WOODWARD (1916). *The Fossil Fishes of the English Wealden and Purbeck Formations, II.* Paleontological Society, LXIX, October, 1916.

ARTHUR SMITH WOODWARD.

Hylæobatis Woodward, 19; orthotype H. PROBLEMATICA Woodw. (fossil).

1917.

2375. EASTMAN (1917). *Fossil Fishes in the United States National Museum.* Proc. U. S. Nat. Mus., 1917. LII.

CHARLES ROCHESTER EASTMAN.

Parafundulus Eastman, 291; orthotype P. NEVADENSIS Eastman (Pleistocene of Nevada fossil).

2376. EIGENMANN (1917). *The American Characidæ.* Mem. Mus. Comp. Zool., XLIII, pt. 1, 1917.

CARL H. EIGENMANN.

Entomolepis Eigenmann, 63; orthotype TETRAGONOPTERUS STEINDACHNERI Eigenmann.

2377. EIGENMANN (1917). *New and Rare Species of South American Siluridæ in the Carnegie Museum.* Ann. Carneg. Mus., XI, 1917.

CARL H. EIGENMANN.

Cheirocerus Eigenmann, 398; orthotype C. EQUES Eigenmann.

Entomocorus Eigenmann, 403; orthotype E. BENJAMINI Eigenmann.

2378. EVERMANN & RADCLIFFE (1917). *Fishes of the West Coast of Peru and the Titicaca Basin.* Bull. U. S. Nat. Mus., XCV, 1917.

BARTON WARREN EVERMANN; LEWIS RADCLIFFE.

Epelytes Evermann & Radcliffe, 71; orthotype E. PUNCTATUS Evermann & Radcliffe.

Xenoscarus Evermann & Radcliffe, 129; orthotype X. DENTICULATUS Evermann & Radcliffe.

2379. JORDAN (1917). *Notes on Glossamia and Related Genera of Cardinal Fishes.* Copeia, May 24, 1917, pp. 46, 47.

DAVID STARR JORDAN.

Nectamia Jordan, 46; orthotype APOGON FUSCUS Quoy & Gaimard.

Xystramia Jordan, 46; orthotype GLOSSAMIA PANDIONIS G. & B.

Zoramia Jordan, 46; orthotype APOGON GRAEFFEI Gthr.

2380. JORDAN (1917). *The Genera of Fishes, etc.* Stanford Univ. Publ., University Series, June 1, 1917.

DAVID STARR JORDAN.

Thrissocles Jordan, 151; orthotype CLUPEA SETIROSTRIS Broussonet. Substitute for THRYSSA Cuv., preoccupied by THRISSA Raf.

2381. JORDAN (1917). *Changes in names of American Fishes.* Copeia, Oct. 4, 1917.

DAVID STARR JORDAN.

Stenesthes Jordan, 87; orthotype SPARUS CHRYSOPS L. = S. ARGYROPS L. Replaces STENOTOMUS Gill, regarded as preoccupied by STENOTOMA.

Xantocles Jordan, 88 (Oct. 4, 1917); orthotype ZANIOLEPIS FRENATUS Eigenmann.

Thoburnia Jordan & Snyder, 88 (Oct. 4, 1917); orthotype CATOSTOMUS RHOTHŒCUS Thoburn.

2382. JORDAN & HUBBS (1917). *Notes on a Collection of Fishes from Port Said, Egypt.* Ann. Carneg. Mus., XI, 461–468.

DAVID STARR JORDAN; CARL LEAVITT HUBBS.

Glaucus (Klein) Jordan & Hubbs, 463; orthotype SCOMBER GLAUCUS L. Same as CÆSIOMORUS Lac. and HYPODIS Raf.

Dacymba Jordan & Hubbs, 464; orthotype PRISTIPOMA BENNETTI Lowe.

2383. NICHOLS & GRISCOM (1917). *Fresh-Water Fishes of the Congo Basin, obtained by the American Congo Expedition, 1909–1915.* Bull. Am. Mus. Nat. Hist., XXXVII.

JOHN TREADWELL NICHOLS; LUDLOW GRISCOM.

Microstomatichthyoborus Nichols & Griscom, 685; orthotype M. BASHFORDDEANI Nichols & Griscom. It is to be hoped that no one will attempt to break this record as to length of generic name.

Amarginops Nichols & Griscom, 713; orthotype A. PLATUS Nichols & Griscom.

Acanthocleithron Nichols & Griscom, 720; orthotype A. CHAPINI Nichols & Griscom.

Gnathobagrus Nichols & Griscom, 711; orthotype G. DEPRESSUS Nichols & Griscom.

2384. REGAN (1917). *A Revision of the Clupeoid Fishes of the Genus Pellonula and of Related Genera in the Rivers of Africa.* Ann. Mag. Nat. Hist., 1917, 198–207.

CHARLES TATE REGAN.

Pœcilothrissa Regan, 201; orthotype P. CONGICA Regan.

Potamothrissa Regan, 203; orthotype PELLONULA OBTUSIROSTRIS Boulenger.

Cynothrissa Regan, 203; orthotype C. MENTO Regan.

Stolothrissa Regan, 206; orthotype S. TANGANICÆ Regan.

Limnothrissa Regan, 207; orthotype PELLONULA MICRODON Boulenger.

2385. SEALE (1917). *New Species of Apodal Fishes.* Bull. Mus. Comp. Zool., LXI.

ALVIN SEALE.

Garmannichthys Seale, 80; orthotype G. DENTATUS Seale.

2386. SNYDER (1917). *The Fishes of the Lahontan System of Nevada and Northeastern California.* Bull. Bur. Fisheries Washington, XXXV (Sept. 28, 1917).

JOHN OTTERBEIN SNYDER.

Leucidius Snyder, 64; orthotype L. PECTINIFER Snyder.

2387–2388. TANAKA (1917). *Figures and Descriptions of the Fishes of Japan, including Riukiu Islands, Bonin Islands, Formosa, Kurile Islands, and Southern Sakhalin.* (Issued in many parts, 1915 to 1918.)

SHIGEHO TANAKA.

Rosanthias Tanaka, 198; orthotype R. AMŒNUS Tanaka. (In Japanese, July 15, 1917; English version, p. 503, Sept. 28, 1918.)

Cyprinocirrhites Tanaka, 368; orthotype C. UI Tanaka (Japanese, Sept. 15, 1917; English version, p. 507, Sept. 28, 1918).

1918.

2389. ANNANDALE (1918). *Fish and Fisheries of the Inlé Lake.* Rec. Ind. Mus., XIV, 33–64.

NELSON ANNANDALE.

Chaudhuria Annandale, 33–64; orthotype C. CAUDATA Annandale. (A MASTACEMBELUS without spines (*fide* Regan, note on CHAUDHURIA. Ann. Mag. Nat. Hist., 198, Feb., 1919.)

2390. EIGENMANN (1918). *(South American Fishes).* Proc. Am. Philos. Soc., LVI, Jan., 1918.

CARL H. EIGENMANN.

Scleronema Eigenmann, 691; orthotype S. OPERCULATUM Eigenmann.

Branchoica Eigenmann, 702; orthotype B. BERTONII Eigenmann.

2391. EIGENMANN (1918). *The Pygidiidæ, a Family of South American Cat-Fishes.* Ann. Carneg. Mus., VII, Sept., 1918, 259–369.

CARL H. EIGENMANN.

Urinophilus Eigenmann, 359; logotype (indicated in Science, 1920, 441) VANDELLIA SANGUINEA Eigenmann.

2392. HUBBS (1918). *A Revision of the Viviparous Perches.* Proc. Biol. Soc. Washington, May 16, 1918.

CARL LEAVITT HUBBS.

Tocichthys Hubbs, 12; orthotype HYPERPROSOPON AGASSIZI Gill.
Amphigonopterus Hubbs, 13; orthotype ABEONA AURORA J. & G.

2393. HUBBS (1918). *Colpichthys, Thyrinops, and Austromenidia, New Genera of Atherinoid Fishes from the New World.* Proc. Ac. Nat. Sci. Phila. for 1917 (1918).

CARL LEAVITT HUBBS.

Colpichthys Hubbs, 305; orthotype ATHERINOPS REGIS Jenkins & Evermann.
Thyrinops Hubbs, 306; orthotype ATHERINICHTHYS PACHYLEPIS Gthr.
Austromenidia Hubbs, 307; orthotype BASILICHTHYS REGILLUS Abbott. Replaces BASILICHTHYS of Abbott, not of Girard.

2394. HUBBS (1918). *Supplementary Notes on Flounders from Japan, with Remarks on the Species of Hippoglossoides.* Ann. Zool Japonensis, IX, pt. 4, 1918, pp. 369–376.

CARL LEAVITT HUBBS.

Tanakius Hubbs, 370; orthotype MICROSTOMUS KITAHARÆ Jordan & Starks. (Not TANAKIA Jordan & Metz.)

2395. McCULLOCH & WAITE (1918). *Records of the South Australian Museum.*

ALLAN RIVERSTON McCULLOCH; EDGAR RAVENSWOOD WAITE.

Helcogramma McCulloch & Waite, 51; orthotype H. DECURRENS McCulloch & Waite.
Trianectes McCulloch & Waite, 53; orthotype T. BUCEPHALUS McCulloch & Waite.
Echinophryne McCulloch & Waite, 86; orthotype E. CRASSISPINA McCulloch & Waite.
Trichophryne McCulloch & Waite, 68; orthotype ANTENNARIUS MITCHELLI Morton.

2396. OGILBY (1918). Ann. Queensland Mus., VI.

JAMES DOUGLAS OGILBY.

Acanthagonia Ogilby, 45; orthotype A. POWERI Ogilby.

2397. RIBEIRO (1918). *Historia Natural. Zoologia: Cichlidæ.* Comm. Linhas Ielegr. de Matto Grosso ao Amazonas.

ALIPIO DE MIRANDA RIBEIRO.

Nannacara Ribeiro, 14; orthotype ACARA DORSIGERA Heckel.
Pseudopercis Ribeiro, 184; orthotype P. NUMIDA Ribeiro.

2398. RIBEIRO (1918). *Desesetes especies de peixes Brasileiros.* Museu Paulista.

ALIPIO DE MIRANDA RIBEIRO.

Pleurophysus Ribeiro, 8; orthotype P. HYDROSTATICUS Ribeiro.
Tannayia Ribeiro, 14; orthotype T. MARGINATA Ribeiro.
Ceratocheilus Ribeiro, 16; orthotype C. OSTEOMYSTAX Ribeiro.

2399. RIBEIRO (1918). Commerc. Geogr. Geol. Soc. Saõ Paulo.

ALIPIO DE MIRANDA RIBEIRO.

Typhlobagrus Ribeiro, 3; orthotype T. KRONEI Ribeiro.

2400. RIBEIRO (1918). *Lista dos peixes Brasileiros do Museu Paulista.*

ALIPIO DE MIRANDA RIBEIRO.

Paragonus Ribeiro, 3; orthotype P. SERTORII Ribeiro. Name twice preoccupied: Gill, Guichenot; replaced by RIBEIROA Jordan, new name, given in honor of the excellent Brazilian naturalist who made this form known.

Gymnogeophagus Ribeiro, 6; orthotype G. CYANOPTERUS Ribeiro.
Decapogon Ribeiro; orthotype D. UROSTRIATUM Ribeiro.

2401. RIBEIRO (1918). *Dous generos e tres especies novas de peixes Brasileiros,* . . . Museu Paulista.

ALIPIO DE MIRANDA RIBEIRO.

Homodietus (Ihering) Ribeiro, 23; orthotype H. PAULENSIS Rudolph. Same as PSEUDOSTEGOPHILUS Ihering, on page 22 of the same paper.
Scleromystax Ribeiro; orthotype S. KRONEI Ribeiro, not of Ogilby.

2402. TANAKA (1918). *Nihon San Gyorui—No Juisshu Shin (Eleven New Species of Japanese Fishes).* Journ. Zool. Studies, Imperial University, Tokyo, XXXIX, No. 13. (In Japanese only.)

SHIGEHO TANAKA.

Vegetichthys Tanaka, 7; orthotype V. TUMIDUS Tanaka. (LUTIANIDÆ.)
Sebastella Tanaka, 10; orthotype S. LITTORALIS Tanaka (SCORPÆNIDÆ).

2403. TANAKA (1918). *Nihon San Ĝyorui—No Roku Shin (Six New Species of Japanese Fishes).* Journ Zool. Studies, Imperial University, Tokyo, XXIX, No. 345. (In Japanese only.)

SHIGEHO TANAKA.

Mustelichthys Tanaka, 301; orthotype M. UI Tanaka (SERRANIDÆ).

2404. TANAKA (1918). *Figures and Descriptions of the Fishes of Japan, including Riukiu Islands, Bonin Islands, Formosa, Kurile Islands, Korea and Southern Sakhalin.* (In English as well as in Japanese.)

SHIGEHO TANAKA.

Selenanthias Tanaka, 516; orthotype S. ANALIS Tanaka (Dec. 28, 1918).
Leptanthias Tanaka, 525; orthotype L. KASHIWÆ Tanaka (Dec. 28, 1918).

2405. WOODWARD (1918). *The Fossil Fishes of the English Wealden and Purbeck Formations, Part 2.* Palæontological Society, February, 1918.

ARTHUR SMITH WOODWARD.

Eomesodon Woodward, 56; orthotype MESODON BARNESI Woodw. (fossil).
Enchelyolepis Woodward, 80; orthotype MACROSEMIUS ANDREWSI Woodw. (Fossil).

2406. WOODWARD (1918). *On Two New Elasmobranchs . . . from the Upper Jurassic Lithographic Stone of Bavaria.* Proc. Zool. Soc. London, 231-235, June 11, 1918.

ARTHUR SMITH WOODWARD.

Protospinax Woodward, 233; orthotype P. ANNECTANS Woodw.

1919.

2407. COCKERELL (1919). *Some American Cretaceous Fish Scales, with Notes on the Classification and Distribution of Cretaceous Fishes.* Bull. U. S. Geol. Surv. for 1918.

THEODORE DRU ALLISON COCKERELL.

Helmintholepis Cockerell, 176; orthotype H. VERMICULATUS Cockerell (fossil ELOPIDÆ).
Chicolepis Cockerell, 176; orthotype C. PUNCTATUS Cockerell (fossil PTEROTHRISSIDÆ).

Leucichthyops Cockerell, 180; orthotype L. vagans Cockerell (fossil Salmonidæ).

Erythrinolepis Cockerell, 182; orthotype E. mowriensis Cockerell (fossil Erythrinolepidæ).

Halecodon Cockerell, 183; orthotype H. denticulatus Cockerell (fossil Enchodontidæ).

Gonorhynchops Cockerell, 183; orthotype G. woodwardi Cockerell (fossil Gonorhynchidæ: English Chalk).

Centrarchites Cockerell, 188; orthotype C. coloradensis Cockerell (fossil Eucentrarchidæ: basal Eocene).

Benthosphyræna Cockerell, 172; orthotype Alepocephalus macropterus Vaillant. This name, noted in passing by Cockerell, was found by him on specimens in the United States National Museum. It was doubtless a manuscript name of Goode & Bean, never published by them, or possibly of Gill. As the genus seems to be valid, the name is accepted by Cockerell and may date from his reference to it, which reads as follows: "Benthosphyræna macroptera, also referred to the Alepocephalidæ, has small round scales wholly unlike those of Alepocephalus." That Benthosphyræna was an unpublished name was not known to Cockerell when he examined the scales of its type species.

2408. EIGENMANN (1919). *Trogloglanis pattersoni, a New Blind Fish from San Antonio, Texas.* Proc. Am. Philos Soc., LVIII, 397–400.

Carl H. Eigenmann.

Trogloglanis Eigenmann, 397; orthotype T. pattersoni Eigenmann (a blind cave representative of the genus Rabida).

2409. EIGENMANN & EIGENMANN (1919). *Steindachneridion.* Science, November, 1919.

Carl H. Eigenmann; Rosa Smith Eigenmann.

Steindachneridion Eigenmann & Eigenmann; logotype Steindachneria amblyura Eigenmann & Eigenmann (Siluridæ). Substitute for Steindachneria Eigenmann & Eigenmann, 1888, preoccupied in Macrouridæ.

2410. HUSSAKOF & BRYANT (1919). *Catalog of the Fossil Fishes in the Museum of the Buffalo Society of Natural Sciences.* Bull. Buffalo Soc. Nat. Sci., Vol. XII.

Louis Hussakof; William L. Bryant.

Perissognathus Hussakof & Bryant, 81; orthotype P. aduncus (based on a mandible) (fossil Arthrodira, Upper Devonic, New York).

Machærognathus Hussakof & Bryant, 83; orthotype M. woodwardi (fossil mandible Arthrodira, Upper Devonic, New York).

Copanognathus Hussakof & Bryant, 84; orthotype C. crassus (fossil mandible Arthrodira, Upper Devonic, New York).

Deinodus Hussakof & Bryant, 123; orthotype D. bennetti (fossil dental plate Ptyctodontidæ, Upper Devonic, New York).

Acmoniodus Hussakof & Bryant, 151; orthotype A. clarkei (fossil dental plate Elasmobranchi, Upper Devonic, New York).

Atopacanthus Hussakof & Bryant, 157; orthotype A. dentatus (fossil spine Ichthyodorulites, Upper Devonic, New York).

2411. JORDAN (1919). *On Certain Genera of Atherine Fishes.* Proc. U. S. Nat. Mus., LV, 309–311.

David Starr Jordan.

Hubbesia Jordan, 310; orthotype Menidia gilberti Jordan & Bollman.

2412. JORDAN (1919). *Note on Gistel's Genera of Fishes.* Proc. Ac. Nat. Sci. Phila., April 10, 1919, pp. 335–340.

DAVID STARR JORDAN.

Urocles Jordan, 338, 343; orthotype M. LEPIDOTUS Ag. (fossil). Substitute for MEGALURUS Ag. and SYNERGUS Gistel, both names being preoccupied.

2413. JORDAN (1919). *New Genera of Fishes.* Proc. Ac. Nat. Sci. Phila., April 10, 1919, pp. 341–344.

DAVID STARR JORDAN.

Aoria Jordan, 341; orthotype BAGRUS LAMARII Cuv. & Val. Substitute for MACRONES Duméril, preoccupied (Newman, 1841, a genus of Beetles).

Azurella Jordan, 341; orthotype POMACENTRUS BAIRDI Gill.

Cotylichthys Jordan, 341; orthotype COTYLIS FIMBRIATA M. & T. Same as COTYLIS Gthr., not of Müller & Troschel, whose original type is a species of GOBIESOX Lac.

Extrarius Jordan, 341; orthotype HYBOPSIS TETRANEMUS Gilbert.

Eperlanio Jordan, 341; orthotype OSMERUS ALBATROSSIS J. & G.

Erythrocles Jordan, 341; orthotype ERYTHRICHTHYS SCHLEGELI Blkr. Substitute for ERYTHRICHTHYS T. & S., preoccupied by ERYTHRICHTHYS Bon.

Nautopædium Jordan, 342; orthotype PORICHTHYS PLECTRODON J. & G. = BATRACHUS POROSISSIMUS Cuv. & Val.

Irillion* Jordan, 342; orthotype COREGONUS OREGONIUS Jordan & Snyder.

Oshimia Jordan, 342; orthotype MICRACANTHUS MARCHEI Sauvage. Name a substitute for MICRACANTHUS Sauvage, 1878, preoccupied by MICROCANTHUS Sw. Named for Masamitsu Oshima, of the Bureau of Scientific Research of Formosa.

Rheocles Jordan & Hubbs, 343; orthotype ELEOTRIS SIKORÆ Sauvage.

Syletor Jordan, 343; orthotype PISODONOPHIS CRUENTIFER G. & B.

Unagius Jordan, 343; orthotype CRYPTOPHTHALMUS ROBUSTUS Franz. Substitute for CRYPTOPHTHALMUS Franz, preoccupied.

Verater Jordan, 343; orthotype OLIGOPUS ATER Risso. Substitute for PTERIDIUM Filippi & Verany, preoccupied by PTERIDIUM Scopoli.

Pnictes Jordan, 343; orthotype ACHIROPSIS ASPHYXIATUS Jordan & Goss. This genus differs from all other soles in having the gill opening on the right side completely closed.

Errex Jordan, 343; orthotype GLYPTOCEPHALUS ZACHIRUS Lockington.

Ainia Jordan, 344; orthotype CALLOPTERUS AGASSIZI Thiollière (fossil). Name a substitute for CALLOPTERUS, preoccupied in beetles; name from the locality Ain, in France.

Raiamas Jordan; orthotype CYPRINUS BOLA Ham. "Rajah Mas" of the anglers in India. Replaces BOLA Gthr., preoccupied.

Tarsistes Jordan, 344; orthotype RHYNCHOBATIS Philippi, 1858. No specific name. Generic name preoccupied as RHYNCHOBATUS. Species named TARSISTES PHILIPPII Jordan.

Vigil Jordan, 344; orthotype PLEUROLEPIS PELLUCIDUS Ag. A substitute for PLEUROLEPIS Ag., preoccupied in fossil fishes.

Orqueta Jordan, 344; orthotype MICROPTERYX (MICROPUS) POLYCENTRUS Kner. A substitute for MICROPUS Kner, four times preoccupied.

---

* "The merry wild Irillion rejoicing from fields of snow" (Dunsaney).

2414. JORDAN (1919). *Fossil Fishes of Southern California, I. Fossil Fishes of the Soledad Deposits* . . . pp. 1–12. Leland Stanford Junior University Publications, University Series, September 18, 1919.
DAVID STARR JORDAN.

Ganolytes Jordan, 6; orthotype G. CAMEO Jordan (fossil).

Rogenites Jordan, 8; orthotype ROGENIO BOWERSI Jordan (fossil).

Rhomurus Jordan, 9; orthotype R. FULCRATUS Jordan (fossil).

Auxides Jordan, 10; orthotype THYNNUS PROPTERYGIUS Ag. (fossil).

Bulbiceps Jordan, 12; orthotype B. RANINUS Jordan (fossil).

Eoperca Jordan, 12; orthotype MIOPLOSUS MULTIDENTATUS Cope (fossil). An Eocene ally of PERCA, differing from MIOPLOSUS in the presence of 12 dorsal spines and in the stronger and more numerous retrorse serrations of the preopercle.

2415. JORDAN (1919). *Description of a New Fossil Fish from Japan.* Proc. Cal. Ac. Sci, IX, 271–272. October 22, 1919.
DAVID STARR JORDAN.

Iquius Jordan, 271; orthotype I. NIPPONICUS Jordan (fossil CLUPEID).

2416. JORDAN (1919). *The Genera of Fishes, Part III.* Leland Stanford Junior University Publications, University Series, October 25, 1919.
DAVID STARR JORDAN.

Laides Jordan, 293; orthotype PANGASIUS HEXANEMA Blkr. Substitute for LAIS Blkr., 1860, preoccupied by LAIS Gistel, VIII, 1849, a tunicate, this being a substitute name for CYNTHIA, preoccupied.

2417. JORDAN (1919). *On Elephenor, a New Genus of Fishes from Japan.* Ann. Carneg. Museum, XII, December 16, 1919, pp. 329–343.
DAVID STARR JORDAN.

Elephenor Jordan, 328; orthotype PTERACLIS MACROPUS Bellotti.

2418. JORDAN & GILBERT (J. Z.) (1919). *Fossil Fishes of Southern California, II. Fossil Fishes of the (Miocene) Monterey Formations of Southern California.* Leland Stanford Junior University Publications, University Series, September 18, 1919, pp. 13–60.
DAVID STARR JORDAN; JAMES ZACCHEUS GILBERT.

Xyne Jordan & Gilbert (J. Z.), 25; orthotype X. GREX J. & G. (fossil CLUPEIDÆ).

Ellimmichthys Jordan, 27; orthotype DIPLOMYSTES LONGICOSTATUS Cope (fossil CLUPEID, Eocene, Brazil).

Alisea Jordan & Gilbert (J. Z), 26; orthotype A. GRANDIS J. & G. (fossil CLUPEID).

Smithites Jordan & Gilbert (J. Z.), 30; orthotype S. ELEGANS J. & G. (fossil DUSSUMIERIID).

Quæsita Jordan & Gilbert (J. Z.), 30; orthotype Q. QUISQUILIA J. & G. (fossil DUSSUMIERIID).

Azalois Jordan & Gilbert (J. Z.), 32; orthotype A. ANGELENSIS J. & G. (fossil DUSSUMIERIID).

Lygisma Jordan & Gilbert (J. Z.), 33; orthotype L. TENAX J. & G. (fossil DUSSUMIERIID).

Porfex Jordan, 36; orthotype F. HYPURALIS Jordan (fossil SCOMBERESOCID).

Zanteclites Jordan & Gilbert (J. Z.), 39; orthotype Z. HUBBSI J. & G. (fossil ATHERINID).

Eritima Jordan & Gilbert (J. Z.), 40; orthotype E. EVIDES J. & G. (fossil APOGONID).

Tunita Jordan & Gilbert (J. Z.), 42; orthotype T. OCTAVIA J. & G. (fossil mackerel).

Ozymandias Jordan, 43; orthotype O. GILBERTI Jordan (fossil of unknown family, probably SCOMBRID).

Lophar Jordan & Gilbert (J. Z.), 44; orthotype L. MIOCÆNUS J. & G. (fossil POMATOMID).

Eclipes Jordan & Gilbert (J. Z.), 47; orthotype E. VETERNUS J. & G. (fossil MERLUCIID). Same as MERRIAMINA Jordan & J. Z. Gilbert.

Lompoquia Jordan & Gilbert (J. Z.), 49; orthotype L. RETROPES J. & G. (fossil SCIÆNOID).

Xyrinius Jordan & Gilbert (J. Z.), 50; orthotype X. HOUSHI J. & G. (fossil CLUPEID, mistaken for a LABROID).

Sebastavus Jordan & Gilbert (J. Z.), 50; orthotype S. VERTEBRALIS J. & G. (fossil SCORPÆNOID).

Rhomarchus Jordan & Gilbert (J. Z.), 51; orthotype R. ENSIGER J. & G. (fossil SCORPÆNOID).

Eoscorpius Jordan & Gilbert (J. Z.), 53; orthotype E. PRIMÆVUS J. & G. (fossil of uncertain relation, probably COTTOID).

Hayia Jordan & Gilbert (J. Z.), 55; orthotype H. DAULICA J. & G. (fossil of uncertain relations, probably COTTOID).

Merriamina Jordan & Gilbert (J. Z.), 56; orthotype M. ECTENES J. & G. (fossil MERLUCIID). A synonym of ECLIPES Jordan & J. Z. Gilbert.

Diatomœca Jordan & Gilbert (J. Z.), 58; orthotype D. ZATIMA Jordan & Gilbert (fossil closely allied to LAMPRIS).

Emmachære Jordan & Gilbert (J. Z.), 59; orthotype E. RHACHITES J. & G. (fossil SERRANID).

2419. JORDAN & GILBERT (J. Z.), (1919). *Fossil Fishes of Southern California, III. Fossil Fishes of the Pliocene Formations* . . . Leland Stanford Junior University Publ., University Series, Sept. 18, 1919, pp. 61–64.

DAVID STARR JORDAN; JAMES ZACCHEUS GILBERT.

Ectasis Jordan & Gilbert (J. Z.), 62; orthotype E. PRORIGER J. & G. (fossil, perhaps ELOPID).

Arnoldina Jordan & Gilbert (J. Z.), 63; orthotype A. INIISTIA J. & G. (fossil GADOID).

2420. JORDAN & HUBBS (1919). *Studies in Ichthyology: A Monographic Review of the Family of Atherinidæ or Silversides.* Leland Stanford Junior University Publications, Dec. 18, 1919.

DAVID STARR JORDAN; CARL LEAVITT HUBBS.

Archomenidia Jordan & Hubbs, 54; type ATHERINICHTHYS SALLEI Regan.

2421. OGILBY (1919). *(Tropidocaulus.)*

JAMES DOUGLAS OGILBY.

Tropidocaulus Ogilby; orthotype BELONE PLATYURA Cuv. & Val. Substitute for EURYCAULUS Ogilby, preoccupied.

2422. NICHOLS (1919). *Um novo genero do Cascudos do familia Loricariidæ (with English translation).* Revista do Mus. Paulista, XI.

JOHN TREADWELL NICHOLS.

Pseudotocinclus Nichols, 9; orthotype P. INTERMEDIUS Nichols.

2423. OSHIMA (1919). *Contributions to the Study of the Fresh-Water Fishes of the Island of Formosa.* Ann. Carneg. Museum, Pittsburgh, XII, Dec. 16, 1919, pp. 169–328.

MASAMITSU OSHIMA (1884–).

Formosania Oshima, 194; orthotype F. GILBERTI Oshima.

Acrossochilus Oshima, 206; orthotype GYMNOSTOMUS FORMOSANUS Regan.

Scaphesthes Oshima, 208; orthotype S. TAMUSIUENSIS Oshima.

Spinibarbus Oshima, 217; orthotype S. HOLLANDI Oshima.

Phoxiscus Oshima, 225; orthotype P. KIKUCHII Oshima.

Aristichthys Oshima, 246; orthotype LEUCISCUS NOBILIS (Gray), Richardson.

Cultriculus Oshima, 252; orthotype CULTER LEUCISCULUS Kner, not Richardson; = HEMICULTER KNERI Kreyenberg.

2424. TANAKA (1919). *Figures and Descriptions of the Fishes of Japan, including Riukiu Islands, Bonin Islands, Formosa, Kurile Islands, Korea and Southern Sakhaliu.* XXIX.

SHIGEHO TANAKA.

Selenanthias Tanaka, 516; orthotype S. ANALIS Tanaka.

Leptanthias Tanaka, 525; orthotype L. KASHIWÆ Tanaka.

1920.

2425. COCKERELL (1920). *(Characilepis).* Proc. U. S. Nat. Mus., 1920 (in press).

THEODORE DRU ALLISON COCKERELL.

Characilepis Cockerell; orthotype C. TRIPARTITUS Cockerell (fossil scales, Miocene of Peru).

2426. GILBERT & HUBBS (1920). *The Macrouroid Fishes of the Philippine Islands and the East Indies.* Bull. U. S. Bureau of Fisheries, 1919 (in press; not yet published).

CHARLES HENRY GILBERT; CARL LEAVITT HUBBS.

Quincuncia Gilbert & Hubbs; orthotype CŒLORHYNCHUS ARGENTATUS Smith & Radcliffe.

Oxygadus Gilbert & Hubbs; orthotype MACRURUS PARALLELUS Gthr.

Hymenogadus Gilbert & Hubbs; orthotype HYMENOCEPHALUS GRACILIS Hubbs.

Papyrocephalus Gilbert & Hubbs; orthotype HYMENOCEPHALUS ATERRIMUS Gilbert.

Ventrifossa Gilbert & Hubbs; orthotype CORYPHÆNOIDES GARMANI J. & G. (Japan).

us — **Atherodon** Gilbert & Hubbs; orthotype OPTONURUS ATHERODON Gilbert & Cramer.

Lucigadella Gilbert & Hubbs; orthotype MACROURUS NIGROMARGINATUS Smith & Radcliffe.

Lucigadus Gilbert & Hubbs; orthotype MACROURUS LUCIFER Smith & Radcliffe.

Hyomacrurus ~~**Hyostomus**~~ Gilbert & Hubbs; orthotype MACROURUS HYOSTOMUS Smith & Radcliffe.

2427. JORDAN (1920). *New Genera of Fossil Fishes from Brazil.* Proc. Acad. Nat. Sci. Phila. for 1919 (March 11, 1920), pp. 208–210.

DAVID STARR JORDAN.

Ennelichthys Jordan, 208; orthotype E. DERBYI Jordan (fossil).

Brannerion Jordan, 209; orthotype CALAMOPLEURUS VESTITUS Jordan & Branner (fossil),

Vinctifer Jordan, 210; orthotype BELONOSTOMUS COMPTONI Ag. (fossil).

2428. JORDAN (1920). *The Genera of Fishes, part IV.*

David Starr Jordan.

Greeleya Jordan, 493; orthotype Eximia rubellio Greeley. Substitute for Eximia Greeley, preoccupied.

Ribeiroa Jordan, 564; orthotype Paragonus sertorii Ribeiro; substitute for Paragonus Ribeiro, preoccupied.

Quisque Jordan, 571; orthotype Q. gilberti Jordan (a small herring from the Miocene of Elmodena, California, with very strong serræ on the belly, and the back also armed; body compressed; vertebræ, 32).

Ganoëssus Jordan, 571; orthotype Ganolytes clepsydra J. & G. (fossil). A large herring, with enameled scales and hour-glass shaped vertebræ, differing from Ganolytes in the much thinner scales. Vertebræ, 42.

Scomberessus Jordan, 571; orthotype Scomberesox acutillus J. & G. (fossil). Differs from the living genus Scomberesox in the much larger dorsal, of 16 rays.

Aristoscion Jordan, 571; orthotype A. emprepes Jordan. (A robust fossil Sciænoid, from the Miocene at Lompoc, allied to Cynoscion, but the anal rays more numerous, 1.15 in number, the dorsal rays about XII — 1.20, and the caudal fin very large. Vertebræ 14 + 10 or 11.)

Beltion Jordan, 571; orthotype B. peronides Jordan (fossil). (Belonidæ, distinguished from Belone by needle-like jaws, moderate, even teeth, and larger scales; Miocene, Lompoc, California.)

Sebastoëssus Jordan, 571; orthotype S. apostates Jordan (fossil). Scorpænidæ, near Sebastodes, but the interneurals all slender and not dilated; fin spines moderate, the second anal spine not enlarged; vertebræ, 24; Miocene, Lompoc, California.

Sebastinus Jordan, 571; orthotype Rixator ineziæ J. & G. (fossil). Miocene Scorpænidæ; allied to Sebastodes Gill, but with undilated interneural spines, and the second anal spine very elongate.

2429. JORDAN & GILBERT (1920). *The Fossil Fishes of the Diatom Beds of Lompoc, California.* Leland Stanford Junior University Publications, February, 1920.

David Starr Jordan; James Zaccheus Gilbert.

Turio Jordan & Gilbert, 15; orthotype T. wilburi J. & G. (fossil Scombrid).

Thyrsocles Jordan & Gilbert, 14, 19; orthotype Thyrsites kriegeri J. & G. (fossil Scombrid).

Thyrsion Jordan, 17; orthotype T. velox Jordan (fossil Scombrid). A synonym of Thyrsocles J. & G.

Zaphleges Jordan, 23; orthotype Z. longurio Jordan (fossil Scombrid).

Ocystias Jordan, 18; orthotype O. sagitta Jordan (fossil Scombrid).

Zelosis Jordan & Gilbert, 24; orthotype Clupea hadleyi J. & G. (fossil, perhaps Alepocephalid).

Aræosteus Jordan & Gilbert, 25; orthotype A. rothi J. & G. (fossil, apparently Zaprorid).

Rhythmias Jordan & Gilbert, 27; orthotype R. starrii J. & G. (fossil Sparid).

Plectrites Jordan, 28; orthotype P. classeni Jordan (fossil Sparid).

Lompochites Jordan, 29; orthotype L. hopkinsi Jordan (fossil, apparently Carangoid).

Rixator Jordan & Gilbert, 31; orthotype R. porteousi J. & G. (fossil Scorpænid).

Zororhombus Jordan, 39; orthotype Z. veliger Jordan (fossil Pleuronectid).

Atkinsonella Jordan, 41; orthotype A. STRIGILIS Jordan (fossil of uncertain relationship, apparently SPARID).

2431. OSHIMA (1920). *Notes on Fresh-Water Fishes of Formosa, with Descriptions of New Genera and Species.* Proc. Ac. Nat. Sci. Phila., 1920 (July 6).

MASAMITSU OSHIMA.

Lissocheilichthys Oshima, 124; orthotype L. MATSUDAI Oshima.
Scaphiodontella Oshima, 125; orthotype S. ALTICORPUS Oshima.
Leucisculus Oshima, 128; orthotype L. FUSCUS Oshima.
Rasborinus Oshima, 130; orthotype R. TAKAKAI Oshima.

2432. REGAN (1920). *The Classification of the Fishes of the Family Cichlidæ, I. The Tanganyika Genera.* Ann. Mag. Nat. Hist., V, January 1920.

CHARLES TATE REGAN.

Tylochromis Regan, 37; orthotype PELMATOCHROMIS JENTINKI Steind.
Heterotilapia Regan, 38; orthotype TILAPIA BUETTIKOFERI Boulenger.
Neotilapia Regan, 38; orthotype CHROMIS TANGANICÆ Gthr.
Otopharynx Regan, 38; orthotype TILAPIA AUROMARGINATA Boulenger.
Limnotilapia Regan, 39; orthotype TILAPIA DARDENNII Boulenger.
Cyathopharynx Regan, 42; orthotype TILAPIA GRANDOCULIS Boulenger.
Limnochromis Regan, 43; orthotype PELMATOCHROMIS AURITUS Boulenger.
Cyphotilapia Regan, 43; orthotype PELMATOCHROMIS FRONTOSUS Boulenger.
Lipochromis Regan, 45; orthotype PELMATOCHROMIS OBESUS Boulenger.
Neochromis Regan, 45; orthotype TILAPIA SIMOTES Boulenger.
Cnestrostoma Regan, 45; orthotype PARATILAPIA POLYODON Boulenger.
Mylochromis Regan, 45; orthotype TILAPIA LATERISTRIGA Gthr.
Sargochromis Regan, 45; orthotype PARATILAPIA CODRINGTONI Boulenger.
Labrochromis Regan, 45; orthotype TILAPIA PALLIDA Boulenger.
Serranochromis Regan, 45; orthotype CHROMYS THUNBERGI Castelnau.
Clinodon Regan, 45; orthotype HEMITILAPIA BAYONI Boulenger.
Callochromis Regan, 46; orthotype PELMATOCHROMIS MACROPS Boulenger.
Leptochromis Regan, 47; orthotype PARATILAPIA CALLIURA Boulenger.
Aulonocranus Regan, 47; orthotype PARATILAPIA DEWINDTI Boulenger.
Hemibates Regan, 49; orthotype PARATILAPIA STENOSOMA Boulenger.

2433. NICHOLS (1920). *A Contribution to the Ichthyology of Bermuda.* Proc. Biol. Soc. Wash., XXXIII, July 24, 1920, 59-64.

JOHN TREADWELL NICHOLS.

Bermudichthys Nichols, 62; orthotype B. SUBFURCATUS Nichols.

ADDITIONS AND CORRECTIONS

1817.

91. CUVIER (1817). *Règne Animal.* Ed. 1.

Myliobatis (Duméril) Cuvier, 137; logotype RAJA AQUILA L. As originally proposed MYLIOBATIS Duméril contained the same species as AËTOBATUS of Blainville (1916). A different type was assigned to the two by Müller & Henle (1838), who adopted both names, assigning an unwonted type to Blainville's genus. In strictness, MYLIOBATIS should be regarded as a synonym of AËTOBATUS and with RAJA AQUILA as the type of both, while RAJA NARINARI should stand as STOASODON Cantor.

1819.

103. RAFINESQUE (1819). *Prodrome,* etc.

Lepomis. The names LEPIDOPOMUS and LEPIOPOMUS have been produced by puristic emendations of this word. Other revisions of Rafinesque's "telescoped" Greek terms were proposed in 1878, as MYXOSTOMA for MOXOSTOMA, HOPLADELUS for OPLADELUS, ICHTHÆLURUS for ICTALURUS, ICHTHYOBUS for ICTIOBUS, PELODICHTHYS for PILODICTIS, etc.

1829.

136B. BANCROFT (1829). *Sea Devil,* etc.

Manta Bancroft, 444; orthotype M. AMERICANA Bancroft = RAIA BIROSTRIS Walbaum.

1831.

146A. CUVIER & VALENCIENNES (1831). *Histoire Naturelle des Poissons, VIII.*

Pelamys Cuvier & Valenciennes, 149; orthotype SCOMBER SARDA L. A synonym of SARDA Cuv.

Scorpis Cuvier & Valenciennes, 503; orthotype S. GEORGIANUS Cuv. & Val.

1837.

217A. MÜLLER & HENLE (1837). *Ueber die Gattungen der Plagiostomen.* Arch. Naturg., III.

JOHANNES MÜLLER; FREDERICH GUSTAV JAKOB HENLE.

Mr. A. R. McCulloch calls my attention to this paper, overlooked by me, in which the names GALEOCERDO, RHYNCHOBATUS, PRISTIOPHORUS, STEGOSTOMA appear.

The name TRYGONORRHINA was first used by Müller & Henle (Mag. Nat. Hist. 2, II, 90) and spelled with the double "r" as above.

Galeocerdo Müller & Henle, 308; orthotype G. ARCTICUS M. & H., not G. TIGRINUS as later given. See p. 192, Genera of Fishes, II.

Page 190, No. 217. The name GYMNURA appears not in the paper quoted, the date of which should be 1838, but in 217A, p. 400.

1838.

217A. MÜLLER & HENLE (1838). Mr. McCulloch informs me that a second article by Müller & Henle, dated Dec. 12, 1837, printed January, 1838, bearing the same title as No. 217 of our series, contains three additional genera:

Pristiurus Müller & Henle, 34; orthotype GALEUS MELASTOMUS Raf. This antedates Bonaparte's use of the same term (1841).

Leptocharias Müller & Henle, 36; orthotype TRIÆNODON SMITHI Gray.

Carcharodon Müller & Henle, 37; orthotype C. RONDELETI M. & H. = SQUALUS CARCHARIAS L. According to McCulloch, the name CARCHARODON is not used by Smith. The earliest reference to CARCHARODON is apparently that of Müller & Henle (Mag. Nat. Hist. 2, II, 1838, 37, January). Those authors saw Smith's specimens (*vide* p. 33) and perhaps heard his paper read at the Zoological Society in September, 1837. They therefore quoted the name as of Smith. But Smith's paper was not published until February 13, 1838, he having read Müller & Henle's paper "about a month previously, in which CARCHARODON appeared, and he evidently withdrew it with names he refers to in his paper" (McCulloch, *in lit.*, June 28, 1920).

1844.

316. McCLELLAND (1844). *Apodal Fishes.*

Strophidon McClelland, 187; logotype MURÆNA SATHETE Ham.

1846.

349A. COCCO (1846). *Phanerobranchus.* Georn. Gab. Lett. Messina Ann., V, VIII, 63–64.

ANASTASIO COCCO.

Phanerobranchus Cocco, 63; orthotype P. KROHNII Cocco, an undetermined larva; name preoccupied.

1849.

417. SMITH (1849). *Zoology of South Africa.*

Tilapia Smith, pl. 5; haplotype T. SPARRMANNI Smith. (Not CHROMIS NILOTICA as stated by error on page 244.) The last-named species is referred by Regan to SAROTHERODON.

1854.

No. 495, p. 256, should read:

495. BRANDT & LOWE (1854). *Description d'un nouveau genre de poisson de la famille des Murénoides.* Mém. Sav. Étrang. St. Petersburg, VII, 169–176.

JOHANN FRIEDRICH BRANDT; RICHARD THOMAS LOWE.

Belonopsis Brandt & Lowe, 174, etc.

1855.

533. COSTA ("1855") should be omitted and transferred to 850 (1864), the proper title being as follows:

533A. COSTA (1855). *(Cyrtorhynchus.)* Cos. Rendic. dell Accad. Pontaniana, 1855.

ORONZIO GABRIELE COSTA.

Cyrtorhynchus Costa; orthotype C. LEOPOLDI Costa, said to be a MYCTOPHID, of uncertain relations; figured by Costa, *Fauna del regno di Napoli.*

1858.

607–612. COSTA (1858). *(Uraleptus.)* This reference should be canceled, according to Mr. Henn. The genus URALEPTUS Costa should appear under No. 350, *Fauna del regno di Napoli* (1846, p. 30). GADELLA Lowe (1843) is still earlier.

612. COSTA (1858). *Luspia Casotti, nuovo genere di pesci fossili della calcarea tenera leccese, Napoli.*

ORONZIO GABRIELE COSTA.

Luspia Costa; orthotype L. CASOTTI Costa (fossil). An ally of SERRANUS Cuv.

1861.

740. GÜNTHER (1861). *Catalogue of Fishes, III.*

Cyttus Günther, 396; orthotype CAPROS AUSTRALIS Rich.

1862.

782. GILL (1862). The genera LEPIDOPSETTA and HYPSOPSETTA date from this paper, page 330, not from 1864.

788. GÜNTHER (1862). *Catalogue, IV.*

Atypichthys, 510; orthotype ATYPUS STRIGATUS Gthr.; substitute for ATYPUS Gthr., preoccupied.

792. ESTHERIA Jones (1862) should be omitted, as ESTHERIA MIDDENDORFI is not a fish but an Entomostracan, according to A. W. Henn. The name is twice preoccupied.

1863.

830A. JOHNSON (1863). *Description of Five New Species of Fish Obtained at Madeira.* Proc. Zool. Soc. London, 36–44.

JAMES YATES JOHNSON

Neoscopelus Johnson, 44; orthotype N. MACROLEPIDOTUS Johnson.

1864.

850. COSTA (1864). *Paleontologia del regno di Napoli, III.* Atti. Accad. Pontan. Napoli, VIII.

ORONZIO GABRIELE COSTA.

Cæus Costa, 65; orthotype C. LEOPOLDI Costa (fossil: indeterminate ELOPIDÆ). Misprinted CACUS by authors.

1865.

892. COSTA (1865), page 336. The name HETEROLEPIS Costa occurs in the volume quoted, but in a different paper, *Nuove osservasioni i terreni ad ittioliti delle provincie Napolitane,* etc.

1872.

1060. CASTELNAU (1872). *Ichthyology of Australia.*

Cæsioperca Castelnau, 49; orthotype SERRANUS RASOR Rich.

Pseudaphritis Castelnau, 92; orthotype P. BASSI Castelnau.

1878.

1234. CLARKE (1878). Read:

Ægeonichthys Clarke, 245; orthotype A. APPELII Clarke.

1243. JORDAN (1878). *Manual of Vertebrates, 2d ed.*

Cristivomer Gill & Jordan, 80; type SALMO NAMAYCUSH Walbaum. Here first defined; in No. 1244, the word occurs on page 89 as name only.

1880.

1310. KLUNZINGER (1880). *Müllersche Sammlung.*

Colpognathus Klunzinger, 339; orthotype PLECTROPOMA DENTEX Cuv. & Val.

1884.

1423A. GIGLIOLI & ISSEL (1884). *Pelagos, Saggi sulta vita e sui prodotti del mare, Genova.*

ENRICO HILLYER GIGLIOLI; RAFFAELE ISSEL.

Hymenocephalus Giglioli, 228; orthotype H. ITALICUS Giglioli.

1888.

1543. VAILLANT, p. 444.

Neostoma and **Eustomias** should be omitted. Both genera are of Filhol, 1884.

1894.

1689. BEAN, p. 463. Omit CYCLOPSETTA, a genus of Gill, of 1888.

1895.

1720. JORDAN (1895), p. 469. Add:

Garmannia Jordan, 495; orthotype GOBIUS PARADOXUS Gthr.

1896.

Omit 1755, p. 476; duplicated.

1898

1780. BOULENGER (1898). *Lake Tanganyika,* etc. Add:

Ectodus Boulenger, 21; logotype E. DESCAMPSI Boulenger.

Clariallabes Boulenger (1900); orthotype C. MELAS Boulenger. This generic name, omitted in the Zoological Record, I have failed to locate.

1900.

1848, etc. The name of Jacques Pellegrin should be spelled without the acute accent.

1901.

1883. TRAQUAIR (1901). *Notes,* etc.

Cœlacanthopsis Traquair, 113; orthotype C. CURTA Traquair (fossil).

1903.

1938. GILCHRIST. CYTTOSOMA should be omitted (see No. 1977).

1904.

1975. FOWLER.

Boulengerina, inserted here by error, should be omitted. Its type is DULES MATO Lesson. That of SAFOLE (No. 2084) is DULES TÆNIURUS.

Omit 1993, p. 510; duplicated.

1905.

2003. BLAKE (1905). *Monograph of the Fauna of the Cornbrash, Pisces.* Pal. Soc. Mon., LIX, 1–100.

J. F. BLAKE.

Macromesodon Blake, 32; orthotype GYRODUS MACROPTERUS Ag. Substitute for MESODON Wagner, preoccupied. A synonym of TYPODUS Quenstedt.

2018. JORDAN & EVERMANN (1905). *Aquatic Resources,* etc. Add:

Jenkinsiella Jordan & Evermann, 83; orthotype MICRODONOPHIS MACGREGORI Evermann.

1913.

Omit 2282, p. 549; duplicated.

1915.

2330. BERG (1915) should be omitted. CHILOGOBIO is based on both C. CZERSKII and C. SOLDATOVI.

1916.

2367. ROULE.

Barathrites should be omitted. The genus is of Zugmayer (see No. 2222).

1918.

2401. IHERING.

Homodietus Ihering should be canceled. The genus HOMODIÆTUS is of Eigenmann & Ward (see page 522).

INDEX TO PART IV.

Abalistes, 519
Abbottina, 505
Ablennes, 435
Aboma, 468
Aborichthys, 547
Abramites, 518
Abryois, 499
Abyssicola, 468
Abyssocottus, 516
Acanthagonia, 564
Acanthalburnus, 558
Acanthobatis, 436
Acanthocaulus, 491
Acanthocephalus, 426
Acanthochænus, 428
Acanthocharax, 543
Acanthocleithron, 562
Acanthoclinus, 433
Acanthognathus, 542
Acanthogobio, 458
Acantholiparis, 543
Acanthonotus, 440
Acanthopegasus, 556
Acanthophacelus, 521, 533
Acanthophoria, 469
Acanthoplesiops, 545
Acanthopoma, 455
Acanthopsetta, 511
Acanthorhina, 535
Acanthorutilus, 542
Acapoëta, 535
Acarichthys, 543
Acedia, 442
Acentronichthys, 445
Aceratias, 497
Acestridium, 539
Acestrocephalus, 502
Acestrorhamphus, 502
Acestrorhynchus, 502
Acestrus, 496
Acmoniodus, 566
Acmonotus, 475
Acnodon, 502
Acondylacanthus, 425
Aconichthys, 561
Acrodonchus, 446
Acrossochilus, 570
Acropœcilia, 447
Acrotus, 437
Acteis, 508
Actinicola, 508
Actinophorus, 447
Acutomentum, 460
Adioryx, 531
Adrianichthys, 552
Ædua, 456
Æmasia, 494
Æoliscus, 499
Æquidens, Eigenmann
and Bray, 464
Æquidens, Steindachner,
558
Æschrichthys, 424
Æschynichthys, 526
Æthaloperca, 507
Ætheolepis, 470
Æthoprora, 467
Aëtomylæus, 528
Agæonichthys, 575
Aganacanthus, 430
Agassizia, 418
Ageniogarra, 543
Agmus, 542
Agnathomyzon, 518
Agonocottus, 537
Agriosphyræna, 502
Ahlia, 458
Ahynnodontophis, 543
Ainia, 567
Ainocottus, 509
Ainosus, 494
Alæops, 509
Albacora, 442
Albatrossia, 482
Alcichthys, 509
Alcidea, 481
Alcockia, 468
Aldrovandia, 468
Alectrias, 482
Alectridium, 543
Alepichthys, 418
Alexeterion, 444
Alexurus, 468
Alfaro, 544
Alisea, 568
Allabenchelys, 497
Allector, 503
Allinectes, 482
Allochir, 474
Allocyttus, 554
Allogobius, 511
Allolepidotus, 445
Allurus, 474
Amarginops, 562
Amate, 519
Amblypristis, 440
Amiichthys, 435
Amioides, 544
Amitrichthys, 474
Ampheces, 499
Amphigonopterus, 564
Amphilaphurus, 431
Amphioxides, 467
Amphodon, 436
Amylodon, 466
Anaglyphus, 417
Anagramma, 487
Anarchias, 519
Anchovia, 468
Anchoviella, 539
Ancistrodus, 462
Ancylostylos, 469
Andersonia, 488
Anemura, 507
Angelichthys, 473
Anguillavus, 503
Anisistia, 502
Anisocentrus, 554
Anisochætodon, 429
Anodontacanthus, 415
Anomalichthys, 424
Anomalopterus, 436, 444
Anomœdus, 437
Anopleutropius, 463
Anoplopterus, 448

Anostomoides, 529
Anotopterus, 541
Ansorgia, 542
Anteliochimæra, 534
Anyperistieus, 529
Aoria, 567
Apareiodon, 559
Aparrius, 528
Apateacanthus, 456
Apateodus, 496
Apateolepis, 453
Aphelichthys, 460
Aphnelepis, 470, 471
Aphyocheirodon, 556
Aphyodite, 542
Apiorhynchus, 477
Apiostoma, 477
Apistogramma, 550
Apistops, 540
Aplodon, 426
Apocopodon, 434
Apodastyanax, 539
Apodoglanis, 512
Apogonops, 475
Apostasis, 455
Apristurus, 548
Aprodon, 451
Apsett 490
Apterygocampus, 551
Aræosteus, 571
Araias, 509
Aramaca, 433
Arbaciosa, 472
Archæomene, 470
Archæoniscus, 456
Archæosemionotus, 445
Archæoteuthis, 436
Archæotolithus, 537
Archaulus, 543
Archicheir, 533
Archistes, 481
Archomenidia, 569
Archoperca, 474
Arctoscopus, 474
Areliscus, 490
Argo, 426
Argopleura, 547
Argyripnus, 477
Argyrocottus, 458
Arhynchobatis, 534
Ariomma, 508
Ariscopus, 499
Aristichthys, 570
Aristommata, 462
Aristoscion, 571
Aristostomias, 552
Arnoldina, 569
Artedidraco, 515
Artediellus, 433
Asiphonichthys, 464
Askoldia, 537
Aspasma, 498
Aspasmagaster, 526
Asperina, 475
Aspidoras, 524
Aspiolucius, 521
Aspiopsis, 546
Aspistor, 482
Asprocottus, 516
Asprotilapia, 492
Asquamiceps. 541
Astatheros, 510
Astatoreochromis, 510
Astatoliapia, 510
Asteroplax, 456
Asterorhombus, 558
Asterotheca, 556
Asthenocormus, 470
Astraspis, 459
Astrabe, 494
Astrabodus, 427
Astrapogon, 523
Astrolytes, 469
Astyacinus, 522
Ateleaspis, 488
Ateleobrachium, 543
Atelomycterus, 548
Atherstonia 449
Athlennes, 435
Atherion, 495
Atherinomorus, 503
Atherodon, 570
Atkinsonella, 571
Atopacanthus, 566
Atopichthys, 486
Atopoclinus, 466
Atypichthys, 575
Atyposoma, 485.
Auchenilabrus, 496
Auchenistius, 485
Auchenoceros, 447
Auctospina, 460
Aulastomatomorpha, 449
Aulonocranus, 572
Aulorhamphus, 453
Aurion, 561
Austroberyx, 540
Austrocobitis, 487
Austrogobio, 483
Austrolabrus, 430
Austrolycichthys, 550
Austrolycus, 550
Austromenidia, 564
Austrophycis, 477
Autisthes, 431
Auxides, 568
Averruncus, 469
Avocettina, 458
Axyrias, 476
Azalois, 568
Azevia, 442
Azuma, 499
Azurina, 481
Azurella, 567
Azteca, 473
Aztecula, 482
Baicalocottus, 501
Baiostoma, 419
Baleichthys, 452
Bambradon, 528
Barathrites, 541, 560, 576
Barathrodemus, 419
Barathronus, 435
Barbulifer, 440
Bascanichthys, 458
Bassobythites, 517
Bassozetus, 424
Batacanthus 425
Bathyagonus, 451
Bathyalopex, 492
Bathybates, 479
Bathyclupea, 454
Bathycongrus, 483
Bathylaco, 467
Bathylychnus, 497
Bathymyrus, 450
Bathymyzon, 424
Bathyonus, 432
Bathyophilus, 423
Bathypercis, 460
Bathyphasma, 467
Bathysauropsis, 540
Bathyseriola, 449

Bathysolea, 560
Bathysoma, 450
Bathystethus, 461
Batrachocottus, 501
Batrachomœus, 529
Bayonia, 538
Bdellodus, 421
Beanea, 500
Bedotia, 506
Belemnacanthus, 479
Bellator, 475
Bellottia, 423
Belonepterygion, 556
Belonocharax, 523
Belonoglanis, 496
Belonopterois, 560
Belonopsis, 574
Beltion, 571
Bembradium, 513
Benedenichthys, 453
Bengalichthys, 531
Bennettia, 507
Bentenia, 494
Benthalbella, 541
Benthobatis, 478
Benthocometes, 468
Benthodesmus, 419
Benthosaurus, 435
Benthosema, 467
Benthosphyræna, 566
Bergia, 456
Bergiaria, 493
Bergiella, 489
Bermudichthys, 572
Bero, 509
Besnardia, 549
Biat, 533
Biotæcus, 502
Biotodoma, 502
Bipinnula, 474
Birkenia, 488
Bivibranchia, 542
Biwia, 505
Blenniolus, 481
Blenniophidium, 457
Bleptonema, 553
Boggiania, 478
Bogoslovius, 482
Bollmannia, 447
Bonapartia, 467
Boopsetta, 470
Borborys, 432
Borostomias, 529
Bothragonus, 420
Bothrocara, 450
Bothrocaropsis, 486
Boulengerella, 502
Boulengerina, 507, 523, 576
Boulengerochromis, 510
Bowersia, 504
Brachælurus, 519
Brachiacanthus, 446
Brachioptera, 518
Brachychalcinus, 457
Brachydanio, 561
Brachydirus, 424
Brachyglanis, 542
Brachygnathus, 533
Brachymylus, 460
Brachyrhaphis, 550
Bradyurus, 508
Bramichthys, 516
Branchoica, 563
Brannerella, 489
Brannerion, 570
Breitensteinia, 417
Brephostoma, 444
Brevigobio, 561
Brontichthys, 464
Brosmiculus, 444
Browneichthys, 449
Brychætus, 495
Brycochandus, 528
Bryconamericus, 522
Bryconodon, 502
Bryolophus, 499
Bryostemma, 469
Bryssetæres, 472
Bryssophilus, 481
Bryttosus, 490
Buccone, 472
Bulbiceps, 568
Cacus, 575
Cæus, 575
Cæsioperca, 575
Caffrogobius, 487
Cainosilurus, 416
Callaus, 447
Calliblennius, 541
Callidulus, 265
Calliscyllium, 546
Calliurichthys, 505
Callochromis, 572
Callognathus, 447
Callopristodus, 443
Calotomus, 451
Calymmichthys, 553
Campogramma, 505
Campyloprion, 498
Candidia, 533
Canobius, 418
Cantioscyllium, 449
Capoëtobrama, 558
Caprichthys, 557
Caproberyx, 540
Capromimus, 461
Caragobiu 520
Carassiops, 477
Carcharioides, 516
Carcharodon, 573
Carcharoides, 547
Carcharopsis, 422
Caremitra, 474
Cariniceps, 496
Caristius, 514
Carlia, 554
Carnegiella, 532
Caruichthys, 546
Cascadura, 547
Caspialosa, 555
Caspiomyzon, 516
Castelnauia, 523
Catabasis, 489
Catablemella, 450
Catætyx, 437
Catalufa, 541
Cataphractops, 556
Cathorops, 420
Catlocarpio, 478
Catulus, 548
Caulichthys, 483
Caulistius, 475
Caulolepis, 424
Caulophryne, 468
Caulopsetta, 461
Cearana, 528
Celema, 468
Centrarchites, 566
Centristhmus, 485
Centrobranchus, 507
Centrodraco, 550
Centropercis, 469
Centrophoroides, 431

Cephalocottus, 524
Cephalosilurus, 539
Ceraspis, 439
Ceratobatis, 476
Ceratobranchia, 553
Ceratocheilus, 564
Cerdale, 416
Ceromitus, 551
Cestracion, 560
Cetomimus, 465
Cetonurus, 437
Cetopsorhamdia, 558
Cetostoma, 555
Chænocephalus, 550
Chænodraco, 554
Chætobranchopsis, 522
Chæropsodes, 533
Chalcinopelecus, 455
Chalazacanthus, 422
Chalcodus, 439
Chalinura, 419
Chamaigenes, 542
Champsoborus, 531
Champsochromis, 558
Chanoides, 495
Chapalichthys, 500
Chapinus, 474
Characilepis, 570
Characodus, 423
Charitosomus, 433
Charybdia, 431
Chascanopsetta, 463
Chasmias, 494
Chasmichthys, 494
Chasmocranus, 542
Chaudhuria, 563
Cheiloprion, 551, 561
Cheiragonus, 457
Cheirocerus, 562
Cheirodopsis, 418
Chelæthiops, 485
Chelidoperca, 466
Chelomodus, 462
Chenogaster, 505
Chicolepis, 565
Chilara, 475
Chilatherina, 554
Chilias, 536
Chilochromis, 497
Chilogobio, 552, 555, 576
Chilomyzon, 518
Chilotilapia, 527
Chimæropsis, 439
Chimarrhoglanis, 478
Chirolophius, 505
Chiromystus, 434
Chitonodus, 425
Chitonotus, 416
Chlamydes, 504
Chlamydoselachus, 428
Chlevastes, 494
Chloëa, 494
Chondrenchelys, 443
Choridactylodes, 498
Chorimycterus, 464
Chriodorus, 419
Chriolepis, 455
Chrionema, 513
Chriopeops 559
Chromidotilapia, 479
Chrysobagrus, 485
Chrysoperca, 523
Chthamalopteryx, 438
Chuanchia, 442
Cilus, 489
Cinetodus, 483
Cirrhigaleus, 546
Cirriscyllium, 529
Cirrhitoidea, 504
Cirrhoscyllium, 551
Cisco, 539
Citharidium, 497
Citharoides, 556
Cladacanthus, 422
Clariallabes, 576
Claricola, 474
Clariger, 494
Cleidopus, 423
Cleisthenes, 509
Clevelandia, 440
Clinodon, 572
Clupeonella, 546
Cnestrodon 467
Cnestrostoma, 572
Cobitiglanis, 553
Coccogenia, 532
Coccotis, 419
Cœlacanthopsis, 576
Cœlocephalus, 477
Cœlophrys, 497
Cœlurichthys, 530
Collettia, 467
Collybus, 511
Coloconger, 444
Colocopus, 428
Colögrammus, 461
Cololabis, 473
Colossoma, 502
Colotrigla, 513
Colpichthys, 564
Colpognathus, 575
Columbia, 457
Compsacanthus. 422
Compsura, 556
Conchognathus, 444
Congrammus, 517
Congrellus, 483
Congresox, 451
Congrosoma, 486
Conocara, 467
Copanognathus, 566
Copeichthys, 507
Copeina, 518
Copelandellus, 474
Copodus, 422
Corallicola, 481
Coralliozetus, 485
Coreius, 514
Corematodes, 471
Coreoperca, 472
Coripareius, 543
Corusculus, 494
Corvula, 447
Corymbophanes, 532
Coryzichthys, 529
Coscinoxyron, 523
Cosmochilus, 421
Cottinella, 521
Cottiusculus, 509, 511
Cottocomephorus, 491
Cotylichthys, 567
Craterocephalus, 544
Creedia, 483
Creisson, 525
Crenilepis, 440
Creolus, 420
Cristigorina, 515
Cristivomer 575
Cromeria, 492
Crossias, 509
Crossolycus, 550
Crossophilus, 434
Crossopholis, 421

Cryodraco, 489
Cryphiolepis, 418
Cryptophthalmus, 535
Crytops, 464
Cryptopsaras, 423
Cryptotrema, 451
Crystallaria, 432
Crystallias, 499
Crystallichthys, 482
Ctenobrycon, 527
Ctenochætus, 428
Ctenocharax, 526
Ctenodax, 436
Ctenodentex, 476, 484
Ctenodon, 429
Ctenolepis, 470
Ctenopetalus, 415
Ctenopleuron, 525
Ctenothrissa, 488
Culticula, 491
Cultriculus, 570
Cunningtonia, 517
Curimatella Eig., 446
Curimatella Pellegrin, 533
Cyathopharynx, 572
Cyclolumpus, 546
Cyclopsetta, 441, 463
Cyclopterichthys, 417
Cyclopteroides, 457
Cyclothone, 419
Cygnodraco, 561
Cyneichthys, 536
Cynocharax, 523
Cynodonichthys, 510
Cynopsetta, 506, 519
Cynomacrurus, 532
Cynopœcilus, 545
Cynophidium, 554
Cynopodius, 417
Cynothrissa, 563
Cyphocharax, 518
Cyphotilapia, 572
Cyprinocirrhites, 563
Cypselichthys, 426
Cyrtocara, 497
Cyrtocharax, 523
Cyrtonodus, 427
Cyrtorhynchus, 574
Cyttoides, 436
Cyttomimus, 513
Cyttosoma, 503, 508, 576
Cyttula, 551
Cyttus, 575
Dacodraco, 561
Dactylobatus, 531
Dactylolepis, 433
Dactylophora, 427
Dactyloptena, 528
Dactylostomias, 486
Dacymba, 562
Dæctor, 481
Daia, 510
Daicocus, 528
Daruma, 509
Dastilbe, 536
Dasybatus, 432, 560
Dasycottus, 450
Davidia, 557
Deania, 499
Decapogon Eig., 440
Decapogon Ribeiro, 565
Decterias, 509
Deinodus, 566
Delcastes, 520
Delolepis, 415
Delothyris, 424
Deltodopsis, 425
Deltistes, 476
Delturus, 446
Derepodichthys, 467
Derichthys, 428
Dermatias, 544
Dermatocheir, 532
Dermatopsis, 475
Dermatorus, 449
Deuterodon, 522
Deveximentum, 507
Dexistes, 509
Diagrammella, 544, 549
Dialarchus, 493
Dialommus, 451
Diancistrus, 483
Diapaletoplites, 556
Diaphus, 454
Diapoma, 464
Diastatomycter, 456
Diatomœca, 569
Dibranchichthys, 486
Dibranchopsis, 486
Dicentrodus, 443
Diceratias, 437
Dichistius, 441
Diclitodus, 422
Dicranodus, 432
Dicrolene, 419
Dicromita, 468
Dictyorhabdus, 459
Didymodus, 422
Dimylæus, 423
Dinelops, 527
Dinognathus, 533
Dinogunellus, 451
Dinomylostoma, 517
Dinoperca, 466
Dinopteryx, 496
Dinotopterus, 516
Diodontopsodus, 415
Diodyxodon, 417
Diphyacantha, 559
Diphyodus, 500
Diplacodus, 427
Diplaspis, 438
Diplocanthopoma, 437
Diplolepis, 418
Dipnoites, 441
Dipnolepis, 461
Dipulus, 516
Discobatis, 436
Discotrygon, 535
Disichthys, 547
Dissomma, 497
Dissostichus, 483
Dixonina, 538
Docimodus, 471
Doderleinia, 426
Doiichthys, 551
Dolichopterus, 454
Dolichopteryx, 492
Dolichorhynchus, 495
Doliodus, 459
Dolloa, 489
Dolloidraco, 551
Dollopterus, 516
Dolopichthys, 486
Doryptena, 531
Draciscus, 493
Draconetta, 505
Draculo, 541
Drepanaspis, 439
Drombus, 514
Drydenius, 453
Duopalatinus, 440
Dynatobatis, 436

Dyptychosteus, 537
Dysalotus, 515
Dysomma, 444
Dysyommopsis, 454
Ebisinus, 528
Ebisus, 494
Ebosia, 509
Echinodus, 427
Echinomacrurus, 560
Echinophryne, 564
Eclipes, 569
Ecrincsomus, 537
Ectasis, 569
Ectenias, 553
Ectodus, 576
Ectosteorhachis, 422
Ectreposebastes, 486
Eczematolepis, 458
Eichwaldia, 487
Eigenmannia, 473
Eigenmannina, 518
Elacatinus, 508
Elaphichthys, 509
Elaphotoxon, 512
Elasmodectes, 444
Elassodiscus, 543
Elates, 525
Elattarchus, 472
Electrolepis, 461
Eleginops, 455
Elephenor, 568
Eleria, 514
Ellimma, 548
Ellimmichthys, 568
Ellipes, 536
Ellopostoma, 500
Elopides, 495
Elpisopholis, 531
Elxis, 505
Embassichthys, 475
Emblemaria, 420
Embolichthys, 504
Embryx, 481
Emmachære, 569
Emmeekia, 473
Emmelas, 481
Emmnion, 477
Emmydrichthys, 472
Empetrichthys, 461
Emphycus, 481
Enantioliparis, 443
Enchelion, 503
Enchelybrotula, 549
Enchelyolepis, 565
Endorrhis, 483
Enedrias, 481
Engraulicypris, 461
Engyophrys, 447
Enneanectes, 468
Enneistus, 474
Enneles, 528
Ennelichthys, 570
Entomocorus, 562
Entomolepis, 561
Enypnias, 481
Eobothus, 552
Eobrycon, 525
Eocœlopoma, 496
Eocottus, 496
Eolabroides, 552
Eomesodon, 565
Eomyrus Storms, 484
Eomyrus Ag., 512
Eoörodus, 552
Eoperca, 568
Eopristis, 516
Eopsetta, 433
Eoscorpius, 569
Eosebastes, 474
Eothynnus, 496
Epelytes, 562
Eperlanio, 567
Ephippites, 492
Ephippicharax, 548
Epiceratodus, 456
Epinephelides, 487
Epitomynis, 448
Epitrachys, 448
Equulites, 507
Eretmichthys, 486
Eretmodus, 479
Eretmophorus, 446
Ereunias, 493
Ericara, 477
Ericentrus, 461
Ericteis, 508
Eridacnis, 551
Erilepis, 461
Erimystax, 419
Eriptychius, 459
Erisphex, 509
Eritima, 569
Ernogrammus, 481
Erosa, 509
Errex, 567
Erythrichthys, 525
Erythrinolepis, 566
Erythrocles, 567
Escolar, 468
Eslopsarum, 472
Esloscopus, 474
Esocelops, 495
Estheria, 575
Etelides, 514
Etelinus, 539
Eteliscus, 490
Ethmalosa, 560
Ethmidium, 561
Etringus, 525
Etropus, 416
Euacanthus, 426
Eubiodectes, 503
Eubleekeria, 507
Eucentronotus, 483
Eucentrurus, 495
Euctenius, 417
Euctenodopsis, 495
Euchilichthys, 488
Euchilomycterus, 491
Eucirrichthys, 459
Eucitharus, 441
Eucrossorhinus, 530
Eucrotus, 541
Eucynopotamus, 507
Eudontomyzon, 540
Eudulus, 523
Euelatichthys, 508
Eugnathichthys, 479
Eugnathosaurus, 550
Euleptocephalus, 470
Eulophias, 500
Eumycterias, 493
Eunarce, 535
Eunemacanthus, 425
Eupalæoniscus, 417
Eupetrichthys, 439
Euphanerops, 491
Euphyacanthus, 466
Eupleurodus, 428
Euristhmus, 487
Eurumetopos, 438
Eurycaulus, 529
Eurygnathus, 431

Eurymen, 543
Eurypharnyx, 421
Eurystole, 473
Euscarus, 473
Eusemius, 418
Eusthenopleuron, 418
Eustomias, 427, 444, 576
Eutæniichthys, 494
Eutherapon, 508
Euthyopteroma, 507
Euthynnus, 420
Eutyx, 503
Evapristis, 472
Evarra, 470
Evenchelys, 498
Evermanella, 493
Evermannella, 502
Evermannia, 468
Evermannolus, 522
Evesthes, 536
Eviota, 504
Evistias, 524
Evistius, 461
Evolantia, 503
Evynnis, 544
Exallias, 514
Execestides, 514
Exerpes, 472
Eximia, 493
Exocœtoides, 431
Exonautes, 472
Expedio, 534
Extrarius, 567
Exyrias, 519
Falcula, 487
Falcularius, 504
Fajumia, 511
Farlowella, 445
Farnellia, 484
Fayolia, 452
Fimbriotorpedo, 435
Fissala, 513
Flammeo, 482
Fluvidraco, 505
Foa, 514
Fodiator, 432
Fontinus, 473
Forcipiger, 481, 482
Forfex, 568
Formosania, 570
Fowleria, 504
Fowlerina, 522
Franzia, 553
Furcella, 475
Furcimanus, 482
Furcina, 509
Fusania, 514
Gadomus, 505
Galasaccus, 559
Galeagra, 503
Galeocerdo, 573
Gambusinus, 473
Gamphacanthus, 458
Ganiodus, 447
Ganoëssus, 571
Ganolepis, 463
Ganolytes, 568
Ganopristodus, 417
Ganosteus, 500
Gareus, 556
Garmanina, 518
Garmannia, 575
Garmannichthys, 563
Garrupa, 452
Gastropristis, 556
Gastropsetta, 463
Gastrostomus, 424
Gavialiceps, 444
Gemundina, 506
Gennadius, 525
Genycharex, 543
Genyomyrus, 479
Gephyroberyx, 497
Gephyrocharax, 543
Gephyrochromis, 492
Gephyroglanis, 485
Gephyrura, 454
Gerlachea, 489
Germo, 442
Gigantactis, 497
Gigantichthys, 440
Gigantogobius, 513
Gigantopterus, 516
Gigantura, 492
Gigliolia, 465
Gilbertella Waite, 501
Gilbertella Eig., 502
Gilbertia, 452
Gilbertidia, 484
Gilbertina, 469
Gilbertolus, 522
Gilchristia, 524
Gillellus, 451
Gillias, 485
Gillicus, 480
Gillidia, 552
Girellops, 550
Glandulocauda, 538
Glaniopsis, 485
Glaridichthys, 471
Glaridodon, 467
Glaucus, 562
Glossolepis, 527
Glyphanodus, 422
Glyptaspis, 447
Glyptognathus, 456
Glyptophidium, 444
Glyptorhynchus, 515
Gnathacanthus, 422
Gnathobagrus, 562
Gnathocharax, 548
Gnathorhiza, 422
Gnathostomias, 554
Gobiobotia, 540
Gœldiella, 489
Gonialosa, 560
Gonorhynchops, 566
Goodella, 477
Gordiichthys, 458
Gorgonichthys, 457
Gosfordia, 453
Grammatonotus, 513
Grammatostomias Goode & Bean, 468
Grammatostomias, Holt & Byrne, 536
Grammatotria, 485
Grammoplites, 508
Graus, 438
Graviceps, 502
Greeleya, 571
Grimaldichthys, 551
Grypodon, 486
Gudusia, 539
Guentheridia, 508
Gulapinnus, 549
Gurnardus, 481
Gymnapogon, 515
Gymnatacanthus, 425
Gymnelichthys, 431
Gymnocharacinus, 506
Gymnoclinus, 543
Gymnocorymbus, 527

Gymnodiptychus, 458
Gymnogeophagus, 565
Gymnognathus, 429
Gymnolycodes, 444
Gymnorhamphichthys, 543
Gymnosimenchelys, 531
Gymnotorpedo, 435
Gymnura, 574
Gyrinichthys, 467
Gyrinocheilus, 500
Gyrinostomus, 434
Gyrinurus, 545
Gyrionemus, 443
Gyrolepidotus, 448
Gyropeltus, 462
Hacquetia, 436
Hadropareia, 511
Halaphya, 447
Halecodon, 566
Halecopsis, 496
Halicmetus, 454
Halieutella, 432
Halieutopsis, 486
Halimochirus, 484
Halobatrachus, 529
Halosaurichthys, 444
Halosauropsis, 471
Haploblepharus, 548
Haplochromis, 442
Haplodon, 426
Haploglossa, 518
Haplolepis, 458
Haplophryne, 545
Haplotaxodon, 517
Harpacanthus, 436
Harpacodus, 415
Harpage, 427
Harriotta, 464
Hasemania, 538
Hassar, 440
Hatcheria, 533
Haustor, 473
Hayia, 569
Hazeus, 494
Helcogramma, 564
Helgia, 448
Helichthys, 532
Helicolenus, 468
Helicoprion, 487
Helmintholepis, 565
Hemerorhinus, 561
Hemibates, 572
Hemicladodus, 427
Hemictenodus, 452
Hemiculterella, 439
Hemieleotris, 560
Hemiexocœtus, 493
Hemigrammocypris, 535
Hemiodopsis, 518
Hemimyzon, 540
Hemipsilichthys, 446
Hemipterois, 540
Hemiptychodus, 465
Hemisalanx, 530
Hemiscaphirhynchus, 542
Hemistichodus, 491, 557
Hemitilapia, 497
Henicichthys, 558
Henochilus, 451
Henonemus, 522
Hephæstus, 431
Hephthocara, 457
Heringia, 539
Hermosilla, 442
Herops, 431
Hesperoleucus, 546
Heteracanthus, 447
Heterenchelys, 545
Heterocharax, 543
Heterogramma, 520
Heterolepis, 574
Heterophallus, 555
Heteropleuron, 469
Heteroscyllium, 530
Heteroscymnus, 546
Heterotilapia, 572
Hexagrammoides, 524
Hierichthys, 499
Hilgendorfia, 468
Hilsa, 560
Hippopotamyrus, 520
Hisonotus, 445
Hispanicus, 474
Histiobranchus, 424
Histiocephalus, 453
Histicottus, 441
Histiodraco, 555
Histiogamphelus, 553
Histionotopterus, 507
Histiothrissa, 495
Holcodon, 433
Holcomycteronus, 486
Holesthes, 502
Hollandichthys, 535
Holobrycon, 532
Holonema, 447
Holopetalichthys, 469
Holoprion, 502
Holopristis, 502
Holosesthes, 502
Holurus, 418
Homalodus, 423
Homalopteroides, 513
Homesthes, 481
Homodemus, 431
Homodietus, 565, 576
Homodiætus, 522
Homostolus, 549
Hopladelus, 573
Hoplerythrinus, 467
Hoplias, 503
Hoplolatilus, 438
Hoplotilapia, 443
Howella, 483
Hubbesia, 566
Hunsruckia, 506
Hussakofia,535
Hyalorhynchus, 536
Hybocladodus, 486
Hydropessum, 532
Hylæobatis, 558, 561
Hymenocephalus, 575
Hymenogadus, 570
Hynnodus, 513
Hyostomus, 570
Hypargyrus, 428
Hyperchoristus, 424
Hyperlophus, 458
Hyphessobrycon, 528
Hypnarce, 501
Hypocaranx, 429
Hypoclydonia, 468
Hypolophites, 549
Hypomacrus, 523
Hypopleuron, 549
Hyposerranus, 429
Hypsirhynchus, 427, 468
Hypsopsetta, 575
Hypsospondylus, 403
Hysteronotus, 538
Icanodus, 458
Icelinus, 433

Ichthælurus, 573
Ichthyobus, 573
Ictalurus, 573
Icticus, 553
Ictiobus, 573
Iheringichthys, 489
Ijimaia, 516
Illana, 520
Ilyodon, 522
Ilyophis, 454
Ilypnus, 474
Imparfinis, 489
Inegocia, 549
Inimicus, 509
Inopsetta, 433
Insidiator, 490
Inu, 534
Ioglossus, 419
Iotochthys, 473
Iquius, 568
Iracundus, 504
Iridio, 473
Irillion, 567
Isacia, 462
Isaciella, 462
Ischikauia, 490
Ischnomembras, 503
Isesthes, 420
Iso, 495
Isobuna, 525
Isopholis, 439
Isopsetta, 420
Istlarius, 486
Isurichthys, 496
Jenkinsia, 473
Jenkinsiella, 576
Jenynsella, 529
Jobertina, 533
Joinvillea, 531
Jordania, 469
Jordanicus, 513
Jordanidia, 541
Julichthys, 431
Julidio, 473
Julidochromis, 479
Kanekonia, 558
Kareius, 490
Kelloggella, 519
Kenoza, 473
Kessleria, 418
Kirtlandia, 473
Knightia, 525
Knodus, 538
Konosirus, 490
Kræmeria, 521
Krambergeria, 511
Krefftius, 478
Kronia, 557
Kronichthys, 530
Krusensteniella, 511
Labichthys, 424
Labidorhamphus, 513
Labracopsis, 426
Labrochromis, 572
Lactoria, 498
Læmonemodus, 503
Læoptichthys, 556
Læphichthys, 560
Lagarodus, 480
Lahiliella, 502
Laides, 568
Laimumena, 430
Lambdopsetta, 520
Lambertia, 465
Lampadena, 467
Lamprichthys, 540
Lamprogrammus, 454
Lamprologus, 452
Lamprotoxus, 548
Lanarkia, 488
Landonia, 553
Lappanella, 452
Larimichthys, 514
Lasanius, 488
Lebistes, 487
Leedsia, 448
Leedsichthys, 449
Lefua, 442
Leiogaster, 551
Leme, 427
Lepadichthys, 511
Lepidiolamprologus, 510
Lepidopomus, 573
Lepidoblepharon, 551
Lepidoglanis, 448
Lepidoperca, 554
Lepidoterus, 459
Lepidopsetta, 575
Lepidothynnus, 447
Lepiopomus, 572, 573
Lepomis, 573
Lepophidium, 467
Leptanthias, 565
Leptecodon, 488
Leptichthys, 487
Leptoancistrus, 559
Leptobrycon, 555
Leptocerdale, 537
Leptocharias, 573
Leptochromis, 572
Leptocypris, 488
Leptodoras, 479
Leptodus, 424
Leptoderma, 436, 444
Leptoglanis Boulenger, 496
Leptoglanis Eigenmann, 542
Leptogoniates, 437
Leptophilypnus, 559
Leptophycis, 486
Leptorhaphis, 550
Leptoscolopsis, 558
Leptostomias, 513
Leptostyrax, 491
Lepturacanthus, 512
Lepturichthys, 540
Lestidiops, 559
Lestidium, 513
Lesueuriella, 523
Lesueurina, 523
Letharchus, 419
Lethostole, 473
Lethotremus, 469
Lethrinella, 508
Lethrinichthys, 544
Leucalburnus, 552, 558
Leucichthyops, 566
Leucicorus, 486
Leucidius, 563
Leucisculus, 572
Leucogobio, 471
Leuroglossus, 457
Lewisia, 431
Liauchenoglanis, 558
Lile, 473
Limandella, 519
Limiculina, 523
Limnichthys, 511
Limnocottus, 516
Limnochromis, 572
Limnothrissa, 563
Limnotilapia, 572

Linophryne, 434
Liocranium, 510
Lioglossina, 457
Liopempheris, 549
Liopteryx, 551
Lionurus, 437
Lipariscus, 556
Liparops, 457
Liparus, 448
Lipochromis, 572
Lipogenys, 465
Lipomyzon, 415
Lipophrys, 471
Lispacanthus, 422
Lispognathus, 458
Lissocheilichthys, 572
Lissochilus, 561
Lissolepis, 427
Lissoprion, 524
Lithogenes, 532
Lithoxus, 542
Liza, 428
Lo. 519
Lobochilotes, 558
Lobodus, 422
Lobopterus, 569
Lompochites, 571
Lompoquia, 569
Longurio, 514
Lophar, 569
Lophiodes, 468
Lophiomus, 419
Lophiurus, 418
Lophocephalus, 520
Lophorhombus, 421
Lophostracon, 429
Loro, 473
Lovettia, 556
Lubricogobius, 558
Lucifer, 418
Lucioblennius, 457
Luciobrotula, 549
Luciocyprinus, 511
Luciogadella, 570
Luciogadus, 570
Luciolates, 552
Luciopimelodus, 440
Luspia, 574
Luxilinus, 432
Lycenchelys, 428
Lychnopoles, 486
Lycias, 481
Lycocara, 428
Lycodapus, 457
Lycodonus, 419
Lycodophis, 444
Lycogramma,55 6
Lyconectes, 467
Lyconema, 467
Lyconus, 437
Lygisma, 568
Lyocetus, 437
Lyoliparis, 474
Lyopsetta, 433
Lyosphæra, 480
Lyrolepis, 436, 510
Lysodermus, 520
Lythrichthys, 509
Lythrulon, 428
Lythrypnus, 474
Maccullochia, 537
Macdonaldia, 465
Macgregorella, 533
Machærognathus, 566
Machærope, 483
Macleayina, 523
Macrepistius, 464
Macrhybopsis, 532
Macrias, 493
Macristium, 505
Macromesodon, 576
Macropharynx, 497
Macrophthalmia, 478
Macropsobrycon, 555
Macrostomias, 497
Macrotrema, 545
Macrouroides, 544
Macrurrhynchus, 475
Malacobatis, 523
Malacocottus; 450
Malacosarcus, 437
Malakichthys, 426
Mancopsetta, 514
Manducus, 468
Manta, 573
Mapo, 487
Marcgravia, 435
Marcgravichthys, 557
Margariscus, 532
Markiana, 502
Mars, 519
Marsdenius, 501
Mastigopterus, 549
Masturus, 428
Matæocephalus, 484
Malthopsis, 454
Matsya, 445
Mawsonia, 525
Mayerina, 557
Mazodus, 447
Mearnsella, 530
Medialuna, 462
Megalamphodus, 555
Megalonema, 535, 342
Megalopharynx, 489
Megapleuron, 432, 459
Megastomatobus, 547
Megistopus, 465
Melananosoma, 498
Melaniris, 500
Melanobranchus, 505
Melanostigma, 416
Melanostoma, 426
Melanostomias, 497
Merinthe, 511
Meristodon, 425
Merogymnus, 529
Merriamella, 525
Merriamina, 569
Merulinus, 481
Mesacanthus, 443
Mesiteia, 433
Mesoborus, 490
Mesocottus, 524
Mesogomphus, 423
Mesolophodus, 449
Mesopoma, 453
Metaceratodus, 534
Metallites, 448
Metopacanthus, 439
Metopomycter, 513
Metoponichthys, 420
Micralestes, 485
Microbrachium, 443
Microbrycon, 553
Microcharax, 533
Microconger, 543
Microconodus, 470
Microeleotris, 559
Microgenys, 547
Microglanis, 542
Microlepidium, 486
Microlepidogaster, 445

Micrognathus, 542
Microschemobrycon, 555
Microstomatichthyoborus, 562
Microsynodontis, 501
Microthrissa, 496
Millerichthys, 458
Mimagoniates, 526
Miniellus, 442
Miopsaras, 513
Mistichthys, 500
Mitchillina 473
Mitsukurina, 480
Miuroglanis, 446
Mixobrycon, 556
Mixonus, 437
Mnierpes, 474
Modigliania, 462
Mœbia, 468
Mœekhausia, 502
Mohanga, 538
Molua, 463
Molva, 463
Monoceratias, 556
Monocladodus, 460
Monomitopus, 449
Monomitra, 424
Monosira, 417
Monostichodus, 491
Monothrix, 477
Mormyrostoma, 545
Moseleya. 468
Moxostoma, 574
Mucogobius, 544
Mugilogobius, 487
Mulgoa, 478
Mustelichthys, 565
Mycterops, 434
Mylacodus, 423
Mylacrodon, 505
Myleocollops, 502
Myliobatis, 572
Mylochromis, 572
Myloleuciscus, 543
Myloleucops, 547
Mylomyrus, 537
Myloplus, 467
Mylossoma, 502
Mylostoma, 425
Myocharax, 553
Myoglanis, 542
Myomyrus, 479
Mystaconurus, 437
Myropterura, 477
Myxocephalus, 439
Myxostoma, 574
Nannacara Regan, 515
Nannacara Ribeiro, 564
Nannobrachium, 438
Nannorhamdia, 550
Nannoglanis, 437
Nanochromis, 510
Nanognathus, 466
Nansenia, 473
Narcetes, 449
Nasisqualus, 546
Nautiscus, 481
Nautopædium, 567
Neamia, 544
Neatypus, 516
Nectamia, 562
Nectoliparis, 543
Nector, 480
Nedystoma, 483
Neechelys, 555
Nemalycodes, 472
Nemateryx, 529
Nematabramis, 464
Nematalosa, 560
Nematobrycon, 538
Nematochromis, 551
Nematogobius, 534
Nematonotus, 488
Nematonurus, 437
Nematonus, 437
Nematoprora, 513
Nematostomias, 541
Nemuroglanis, 445
Neobagrus, 457
Neobola, 470
Neoborus, 485
Neobythites, 432
Neoceratias, 554
Neochromis, 572
Neocybium, 519
Neoditrema, 426
Neogastromyzon, 515
Neoheterandria, 559
Neolebias, 465
Neomugil, 466
Neoniphon, 431
Neopangasius, 510
Neopatæcus, 430
Neopempheris, 416
Neopercis, 434
Neoplecostomus, 440
Neorhombolepis, 444
Neoscopelus, 575
Neostethus, 560
Neostoma, 427, 444, 576
Neostomias, 518
Neotilapia, 572
Neptotichthys, 451
Nesiotes, 427
Nesogrammus, 522
Nettastomella, 553
Nettastomops, 521
Nettophichthys, 455
Nexilarius, 475
Nexilosus, 503
Nezumia, 509
Nibea, 539
Nivicola, 474
Notelops, 495
Notesthes, 510
Nothosomus, 434
Notoclinus, 461
Notoglanidium, 498
Notogoneus, 430
Notolepidomyzon, 548
Notolepis, 527
Notopogon, 554
Notosema, 419
Notosudis, 561
Occa, 481
Oceanomyzon, 528
Oceanops, 519
Ochmacanthus, 542
Ocosia, 509
Octonema, 438
Octocynodon, 508
Ocyanthias, 474
Ocynectes, 509
Ocystias, 571
Odaxothrissa, 485
Odontesthes, 517
Odontoglyphis, 507
Odontonema, 551
Odontosternarchus, 547
Œdalechilus, 502
Œstophorus, 458
Ogilbia, 480
Oligobrycon, 555

Oligolplarchus, 454
Oloplotosus, 551
Omiodon, 440
Omochætus, 477
Omosudis, 438
Onar, 431
Oncolepis, 478
Onigocia, 549
Onychostoma, 471
Ophiocephalops, 518
Ophiorrhinus, 478
Ophthalmolycus, 551
Ophthalmotilapia, 510
Opisthomyzon, 445
Opisthoproctus, 443
Opladelus, 573
Opostomias, 438
Opsigonus, 418, 469
Opsopœa, 473
Optonurus, 437
Orcella, 473
Orcula, 489
Oreochromis, 446
Oreogobius, 485
Oreoleuciscus, 488
Orqueta, 567
Orthacodus, 449
Orthomyleus, 502
Orthopleurodus, 425
Orthopnias, 541
Orthosternarchus, 547
Orthrias, 505
Orthybodus, 480
Oryzias, 519
Osbeckia, 474
Oshimia, 567
Osopsaron, 509
Osteochromis, 535
Osteogaster, 464
Ostichthys, 474
Ostophycephalus, 487
Osurus, 504
Otakia, 490
Othonias, 539
Othonophanes, 502
Othonops, 417
Otohime, 525
Otomitla, 454
Otopharynx, 572
Otoperca, 558
Otophidium, 433
Otrynter, 472
Owstonia, 531
Oxybarbus, 463
Oxycottus, 481
Oxygadus, 570
Oxygeneum, 431
Oxyglanis, 484
Oxyzygonectes, 559
Oxyodon, 517
Oxyropsis,445
Ozorthe, 481
Ozymandias, 569
Pachycara, 541
Pachychilon, 421
Pachylebias, 496
Pachymylus, 460
Pachyosteus, 503
Pachystomias, 438
Pachyula, 483
Pagetopsis, 550
Pagrosomus, 461
Palæaspis, 427, 430
Palæchimæra, 456
Palæochromis, 526, 537
Palæomylus, 456
Palæospondylus, 453
Palæoniscinotus, 452
Palæophichthys, 527
Palæosteus, 462
Pallasina, 469
Palometa, 479
Pampanoa, 517
Pamphoria, 550
Pamphorichthys, 550
Pampus, 513
Panaque, 446
Pantopholis, 431
Panturichthys, 549
Papyrocephalus, 570
Parabarbus, 535
Parablennius, 557
Paracentroscyllium, 444
Paraceratias, 531
Paracetopsis, 522
Parachela, 417
Paracirrhites, 426
Paraclinus, 443
Paracrossocheilus, 510
Paracymatodus, 558
Paradicrolene, 444
Paradoxichthys, 419
Parafundulus, 561
Paragambusia, 510
Paragobioides, 540
Paragonus, 564
Paragyrops, 560
Paraikichthys, 484
Parailia, 485
Parakuhlia, 549
Paralates, 425
Paraleucogobio, 521
Paralosa, 560
Paralichthodes, 498
Paramphilius, 526
Paramphioxus, 461
Paramyxine, 506
Paranotropis, 507
Parapelecus, 447
Parapercis, 430
Parapetenia, 515
Paraphago, 485
Paraphractura, 496
Parapygæus, 526
Pararasbora, 530
Pararhodeus, 521
Pararutilus, 542
Parasalanx, 530
Parascaphirhynchus, 512
Parascolopsis, 492
Parascombrops, 450
Parasphyænops, 542
Parastremma, 543
Parasudis, 540
Parateleopus, 544
Paratrachichthys, 488
Parathrissops Sauvage, 456
Parathrissops Eastman 553
Paratrigla, 540
Paraturisoma, 545
Parauchenoglanis, 538
Paravandellia, 545
Parazenopsis, 532
Parecbasis, 553
Parelops, 498
Parexostoma, 515
Parhaplodactylus, 425
Parhomaloptera, 500
Parhybodus, 580
Paricelinus, 445
Parioglossus, 545

Parkia, 525
Parmaturus, 518
Parona, 466
Paroneirodes, 449
Parophiocephalus, 515
Parotocinclus, 445
Paulicea, 480
Pelacanichthys, 477
Pelamycybium, 516
Pelamys, 573
Pelichthys, 547
Pellegrinina, 523
Pelmatochromis, 465
Pelodichthys, 573
Pelopsia, 423
Peloropsis, 513
Pelotretis, 541
Peltapleura, 518
Peltura, 459
Penetopteryx, 416
Penopus, 468
Pentaceropsis, 426
Pentagonolepis, 452
Pentanchus, 546
Pentlandia, 561
Percalates, 439
Perissodus, 479
Perissognathus, 566
Perkinsia, 454
Perleidus, 538
Peronedys, 430
Persissias, 481
Pertica, 508
Perugia, 489
Petalodopsis, 423
Petalosoma, 530
Petalurichthys, 545
Petersius, 465
Petraites, 434
Petrochromis, 479
Petroscirtes, 426
Petrotyx, 503
Phalacrus, 496
Phallatorhynus, 559
Phalloceros, 522
Phalloptychus, 522, 559
Phallostethus, 550
Phanagoniates, 553
Phanerobranchus, 574
Phanerosteon, 418
Phenacogaster, 522
Phenacogrammus, 522
Phenagoniates, 553
Phlyctænacanthus, 479
Phlyctænaspis, 453
Phlyctænium, 491
Phlyctænius, 452
Phoderacanthus, 423
Pholidapus, 471
Pholidosteus, 524
Pholidurus, 449
Photoblepharon, 501
Photonectes, 438
Photostomias, 444
Phoxargyrea, 503
Phoxinopsis, 526
Phoxiscus, 570
Phractura, 488
Phrenatobius, 480
Phricus, 466
Phrynotitan, 432
Phylactocephalus, 431
Phycodurus, 471
Phyllogephyra, 479
Phyllichthys, 559
Phyllonemus, 517
Physailia, 492
Piaractus, 502
Pictilabrus, 455
Pilodictis, 573
Pimelodella, 440
Pinacodus, 423
Pisciregia, 484
Pithecomyzon, 548
Pithecocharax, 518
Plagignathops, 521
Plagiogeneion, 450
Plagiogrammus, 460
Plagiopsetta, 535
Planerocephalus, 518
Platea, 484
Platyacanthus, 446
Platyæniodus, 517
Platyaspis, 469
Platyberyx, 541
Platycephalus, 500
Platychodus, 437
Platylates, 539
Platypharodon, 442
Platypogon, 551
Platysilurus, 539
Platyspondylus, 514
Platyxystrodus, 486
Plecodus, 479
Plectobranchus, 451
Plectrites, 571
Plectrogenium, 513
Plectromus, 424
Pleuragramma, 496
Pleurogadus, 433
Pleurophysus, 564
Pleuroplax, 449
Pleurosicya, 551
Plioparchus, 422
Pliotrema, 520
Pluviopsetta, 560
Pneumatophorus, 420
Pnictes, 567
Pnigeacanthus, 425
Podateles, 497
Pœcilobrycon, 533
Pœcilocharax, 533
Pœcilopsis, 550
Pœcilosomatops, 518
Pœcilothrissa, 563
Pogonocharax, 526
Pogonophryne, 554
Pogonopoma, 526
Pogonoscorpius, 530
Polistotrema, 416
Polyacrodus, 447
Polycentropsis, 492
Polyclemus,466
Polyipnus, 438
Polypera, 542
Polypsephis, 486
Pomodon, 466
Ponerichthys, 458
Ponerodon, 449
Poptella, 528
Porochilus, 551
Poroclinus, 450
Porogadus, 532
Porolepis, 456
Poromitra, 419
Poromitrella, 541
Porotergus, 543
Potamalosa, 475
Potamothrissa, 563
Priacanthopsis, 517
Priapella, 550
Priapichthys, 550
Primospina, 460

Prionistius, 421
Prionobrama, 548
Prionodraco, 554 (misprinted Prinodraco)
Pristella, 528
Pristiophorus, 573
Pristiopsis, 512
Pristisomus, 453
Pristiurus, 573
Pristobrycon, 556
Proantigonia, 420
Pristodus, 423
Probalistum, 439
Proballostomus, 454
Probolodus, 538
Procatopus, 506
Procottus, 498
Prognurus, 482
Progymnodon, 422
Prohalecites, 445
Prolates, 487
Prolepidotus, 462
Promacheon, 551
Promethichthys, 461
Promyliobatis, 465
Promyllantor, 449
Pronotacanthus, 491
Proportheus, 533
Propristis, 422
Prosauropsis, 462, 465
Proscyllium, 508
Prosoplismus, 506
Prospiraxis, 439
Protacanthodes, 441
Protacanthus, 460
Protaulopsis, 496
Protautoga, 471
Protelops, 433
Proterorhinus, 487
Protitanichithys, 521
Protoblepharon, 534
Protocatostomus, 453
Protodus, 459
Protopirata, 443
Protopsetta, 511
Protosauropsis, 465
Protospinax, 565
Protothymallus, 495
Psalododon, 538
Psammichthys, 530
Psectrogaster, 445
Psednoblennius, 442
Pselaphias, 519
Psellogrammus, 528
Psettias, 519
Psettina, 556
Psettylis, 450
Pseudacrodus, 516
Pseudalphestes, 466
Pseudaphritis, 575
Pseudepterus, 558
Pseudocheirodon, 559
Pseudocorax, 478
Pseudocorynopoma, 455
Pseudocyttus, 518
Pseudogaleus, 465
Pseudogobiops, 552
Pseudohelotes, 419
Pseudolais, 500
Pseudolates, 483
Pseudomulloides, 557, 560
Pseudomycterus, 529
Pseudonus, 486
Pseudopercis, 506, 564
Pseudophichthys, 557
Pseudophidium, 524
Pseudoplesiops, 485
Pseudopœcilia, 550
Pseudoscaphirhynchus 490
Pseudoscopelus, 458
Pseudosphærodon, 434
Pseudostegophilus, 446
Pseudothryptodus, 490
Pseudothyrina, 557
Pseudotocinclus, 569
Psilocranium, 429
Psychichthys, 523
Psychromaster, 474
Ptenonotus, 529, 554
Pteranthias, 551
Pternodus, 432
Pterobrycon, 547
Pterocapoëta, 498
Pterodiscus, 532
Pterognathus, 481
Pteroidonus, 437
Pterolebias, 467
Pteromylæus, 548
Pteroplatytrygon, 535
Pteropodus, 460
Pteropsaron, 499
Pterorhombus, 517
Pterygotrigla, 488
Ptilichthys, 415
Pungtungia, 458
Pycnomma, 511
Pycnosteus, 537
Pynocraspedum, 444
Pyramodon Radcliffe, 549
Pyramodon Regan, 555
Pyritocephalus, 464
Quadrarius, 524
Quæsita, 568
Quassiremus, 458
Quenselia, 442
Querimana, 420
Quietula, 469
Quincuncia, 570
Quinquarius, 524
Quisque, 571
Quisquilius, 504
Rabidus, 473
Rabirubia, 462
Rabula, 458
Racovitzia, 489
Radulinus, 457
Rafinesquiellus, 474
Raiamas, 567
Raizero, 462
Ramphodus, 504
Ramularia, 481
Ranulina, 519
Rasborinus, 572
Rastrelliger, 528
Rastrinus, 474
Rastrum, 507
Rathbunella, 474
Redfieldius, 486
Regania, 509
Reganichthys, 557
Reganina, 523
Remorina, 475
Retroculus, 464
Rexea, 541
Rhabdamia, 534
Rhabdiodus, 462
Rhabdoderma, 443
Rhabdura, 526
Rhadinacanthus, 443
Rhadinocentrus, 554
Rhamdella, 440
Rhamdioglanis, 524

Rhamdiopsis, 539
Rhamphodes, 422
Rhaphiolepis, 512
Rhegma, 490
Rhencus, 472
Rheocles, 567
Rheopresbe, 509
Rhinechidna, 527
Rhinochimæra, 493
Rhinognathus, 431
Rhinoliparis, 467
Rhinomuræna, 441
Rhinopias, 513
Rhinosardinia, 543
Rhinoscopelus, 458
Rhizoiketicus, 463
Rhizoprion, 557
Rhoadsia, 539
Rhodeoides, 430
Rhodeops, 535
Rhodymenichthys, 475
Rhomarchus, 569
Rhombatractus, 464
Rhombiscus, 490
Rhombocyttus, 461
Rhombosoma, 554
Rhomurus, 568
Rhonchus, 496
Rhonciscus, 472
Rhothœca, 432
Rhyacichthys, 492
Rhycherus, 526
Rhymodus, 423
Rhynchias, 482
Rhynchobatus, 573
Rhynchocypris, 446
Rhynchorhinus, 496
Rhythmias, 571
Ribeiroa, 564, 571
Ricuzenius, 509
Rimicola, 472
Rissola, 475
Rixator, 571
Rogadius, 528
Rogenio, 525
Rogenites, 568
Rondeletia, 465
Ronquilus, 469
Rooseveltia, 519
Rooseveltiella, 556
Rosanthias, 563
Rosicola, 474
Rudarius, 498
Runula, 447
Runulops, 536
Ruscarius, 469
Rusciculus, 493
Rusulus, 541
Saccogaster, 444
Saccostoma, 421
Sacura, 536
Safole, 543, 575
Sagamia, 494
Sagenichthys, 466
Salarigobius, 462
Salema, 472
Salilota, 437
Salmothymus, 527
Samariscus, 513
Sardina, 512
Sargacentron, 507
Sargochromis, 572
Sarritor, 474
Satsuma, 520
Sauromuræenesox, 444
Saurorhynchus, 459
Sauvagea, 519
Sayonara, 518
Scapanorhynchus, 449
Scaphesthes, 570
Scaphiodonichthys, 448
Scaphiodontella, 572
Scaphodus, 453
Scaridea, 493
Scaroides, 534
Scartella, 435
Scartes, 475
Scartichthys, 481
Scartomyzon, 548
Scaumenacia, 463
Sceletophorus, 464
Schedophilopsis, 417
Schismatogobius, 542
Schizochirus, 511
Schizocypris, 554
Schizodontopsis, 451
Schizopondylus, 498
Schmidtia, 509
Schmidtina, 510
Schubotzia, 552
Sciadeoides, 440
Sciadonus, 486
Scianectes, 450
Scidorhombus, 558
Sclerocottus, 431
Scleromystax, 565
Scleronema, 563
Scleropteryx, 465
Sclerorhynchus, 449
Scolenechelys, 477
Scolopacichthys, 555
Scomberessus, 571
Scombramphodon, 496
Scombrinus, 496
Scombrocypris, 446
Scombropsis, 447
Scopelarchus, 470
Scopeloberyx, 541
Scopelogadus, 444
Scopelogenys, 449
Scopeloides, 436
Scorpænoides, 487
Scorpis, 573
Scutica, 473
Scuticaria, 494
Scylliogaleus, 497
Scytalichthys, 458
Scytaliscus, 424
Sealeina, 523
Sebastavus, 569
Sebastella, 565
Sebastinus, 571
Sebastiscus, 509
Sebastoessus, 571
Sebastolobus, 415
Sebastosemus, 513
Sectator, 462
Selachophidium, 503
Selenanthias, 565, 570
Semitapicis, 446
Serranellus, 452
Serranochromis, 572
Serranops, 554
Serraria, 428
Serrivomer, 424
Sicya, 474
Sicyosus, 482
Sierra, 512
Sigmistes, 582
Sigmops, 424
Sigmurus, 481
Signalosa, 480
Simochromis, 479
Simopias, 513

Siphamia, 534
Siphateles, 421
Skiffia, 500
Sladenia, 530
Slatinia, 521
Smithites, 568
Snyderidia, 513
Snyderina, 495
Socnopæa, 511
Solenodon, 416
Soleonasus, 543
Sosia, 500
Spaniolepis, 514
Sparosoma, 425
Sparosomus, 461
Spathiurus, 431
Spathodus, 488
Spectrunculus, 553
Sphenanthias, 551
Sphenophorus, 447
Sphyrænocharax, 523
Spilotichthys, 508
Spinacites, 461
Spinibarbus, 570
Spinivomer, 424
Spintherobolus, 538
Spiraxis, 434
Spirinchus, 473
Spirlingus, 450
Squaliolus, 546
Squalogadus, 559
Squalomugil, 529
Stalix, 499
Stappersia, 552
Starksia, 472
Starksina, 523
Stathmonotus, 430
Steatocranus, 485
Steatogenys, 479
Stegostoma, 573
Steindachnerella, 476
Steindachneria Eig., 440
Steindachneria G.&B., 441
Steindachneridion, 566
Steindachnerina, 518
Steinegeria, 435
Stelgidonotus, 513
Stelgis, 469
Stelgistrum, 481
Stellerina, 474
Stellicarens, 481
Stemmatias, 486
Stemonidium, 513
Stenesthes, 562
Stenobrachius, 450
Stenocaulus, 529
Stenognathus, 479
Stenopropoma, 503
Stenopterodus, 425
Stephanoberyx, 424
Sternarchella, 512
Sternarchogiton, 512
Sternarchorhamphus, 512
Sternoptychides, 448
Stethacanthus, 447
Stethopristes, 513
Stichonodon, 502
Stilbiscus, 442
Stiphodon, 470, 542
Stlengis, 509
Stolothrissa, 563
Stomatorhinus, 478
Stoniella, 553
Strophidon. 574
Stylodus, 421
Stylophthalmus, 497, 517
Stypodon, 415
Styptobasis, 454
Sufflamen, 559
Suruga, 494
Swainia, 474
Syletor, 567
Symmorium, 460
Symphysoglyphus, 551
Sympodoichthys, 441
Symproptoperus, 430
Synagrops, 437
Synchirus, 444
Synechodus, 444
Syntegomodus, 490
Synthetodus, 476
Tæniodus, 425
Tæniomembras, 483
Tænionema, 522
Tæniopsetta, 513
Taius, 544
Talismania, 467
Tamiobatis, 476
Tanakia, 553
Tanakius, 564
Tannayia, 564
Tarandichthys, 472
Tarletonbeania, 454
Tarphops, 553
Tarpon, 473
Tarrasius, 418
Tarsistes, 567
Tathicarpus, 526
Tatia, 545
Tauredophidium, 449
Taurocottus, 557
Taurulus, 524
Tegeolepis, 458
Teleogramma, 485
Telescopias, 495
Telmatherina, 476
Telmatochromis, 479
Temeculina 532
Teratichthys, 419
Teratorhombus, 416
Tetracentrum, 425
Tetranesodon, 551
Tetronarcine, 531
Thalassothia, 466
Tharrhias, 528
Thaumastomias, 449
Thaumatichthys, 546
Thayeria, 527
Thecopterus, 511
Theragra, 481
Therobromus, 482
Thoburnia, 562
Thoracocharax. 523
Thoracodus, 422
Thorichthys, 510
Thrissocles, 562
Thrissomimus, 539
Thrissopteroides, 484
Thryptodus, 490
Thursius, 443
Thymalloides, 527
Thyrina, 468
Thyrinops, 564
Thyriscus, 543
Thyrsion, 571
Thyrsocles, 571
Thysanichthys. 509
Thysanocara, 520
Thysanophrys, 483
Tilapia, 574
Tilesina, 511
Tilodon, 417
Tilurella, 541
Tiluropsis, 541
Tirodon. 419
Titanichthys Newb.,433

Titanichthys Dames, 437
Tocichthys, 564
Todarus, 471
Toledia, 557
Tolypaspis, 462
Tomeurus, 533
Tomocichla, 530
Tomodus, 422
Torrentaria, 474
Torresia, 431
Tosana, 520
Toxoprion, 536
Toxus, 501
Trachichthodes, 503
Trachichthyoides, 501
Trachonurus, 437
Trachosteus, 447
Trachycephalus, 427
Trachyglanis, 496
Trachystoma, 438
Traquairia, 460
Trematocara, 485
Trianectes, 564
Triareus, 537
Tribolodon, 425
Trichocottus, 557
Trichopharynx, 483
Trichophryne, 564
Trichopsetta, 601
Trichostomias, 541
Tridens, 446
Trifissus, 490
Trigrammus, 524
Trimma, 519
Triplophos, 497
Tripterophycis, 497, 501,
Trismegistus, 508
Trissolepis, 460
Triurobrycon, 532
Troglichthys, 485
Trogloglanis, 566
Tropheus, 479
Tropidocaulus, 569
Tropidostethus, 469
Trycherodon, 420
Trygonorrhina, 574
Trypauchenophrys, 535
Trypauchenopsis, 506
Tubulacanthus, 446
Tunita, 569
Turio, 571
Twingonia, 529
Tydemania, 551
Tylobranchus, 542
Tylochromis, 572
Tylodus, 462
Tympanopleura, 542
Typhlobagrus, 526, 564
Typhlonarke, 534
Typhlopsaras, 423
Tyttocharax, 548
Ulæma, 468
Ulca, 472
Ulua, 528
Ulvaria, 475
Ulvicola, 477
Unagius, 567
Urenchelys, 491
Urinophilus, 563
Urobatis, 548
Urocles, 567
Uropteryx, 457
Usinosita, 490
Ussuria, 510
Vailima, 519
Vaillantella, 512
Vaillantoonia, 455
Vaimosa, 519
Valenciennellus, 468
Vaticinodus, 425
Vegetichthys, 565
Velifracta, 524
Vellitor, 509
Venefica, 458
Ventrifossa 570
Veræqua, 509
Verasper, 481
Verater, 567
Verecundum, 452
Verma, 473
Verreo, 499
Verriculus, 404
Vesicatrus, 538
Veternio, 511
Vexillicaranx, 512
Vidalia, 506
Vigil, 567
Villarius, 476
Vinciguerria, 468
Vinctifer, 570
Vinculum, 554
Vireosa, 494
Vitraria, 504
Vitreola, 519
Vulpecula, 548
Vulsiculus, 475
Waitea, 519
Waiteina, 523
Watasea, 494
Winteria, 492
Yarrella, 467
Yozia, 495
Yuriria, 473
Xantocles, 562
Xenanthias, 529
Xenatherina, 526
Xenendum, 487
Xenentodon, 540
Xeneretmus, 504
Xenesthes, 524
Xenisthmus, 531
Xenistius, 420
Xenobythites, 549
Xenocara, 510
Xenochirus, 457
Xenochromis, 485
Xenoconger, 545
Xenocys, 447
Xenodus, 458
Xenognathus, 556
Xenogramma, 511
Xenomystax, 454
Xenopholis 431
Xenopœcilus, 540
Xenopomatichthys, 534
Xenopomichthys, 515
Xenorhychichthys, 530
Xenoscarus, 562
Xenotilapia, 485
Xenurocharax, 550
Xererpes, 469
Xesurus, 473
Xiliphius, 543
Xiphistes, 469
Xiphocharax, 553
Xyne, 568
Xyrauchen, 443
Xyrias, 494
Xyrinius, 569
Xyrocharax, 547
Xyrula, 452
Xystes, 469
Xystæma, 468
Xystodus, 536
Xystramia, 562
Xystroperca, 474

Xystrosus, 487
Zacalles, 499
Zacco, 498
Zaclemus, 472, 473
Zalarges, 469
Zalembius, 473
Zalises, 494
Zalocys, 482
Zalypnus, 474
Zameus, 504
Zanclistius, 524
Zanobatus, 548
Zanteclites, 568
Zaphleges, 571
Zaphotias, 482
Zaprora, 472
Zastomias, 556
Zebrias, 490
Zelosis, 571
Zen, 504
Zenion, 473
Zesticelus, 474
Zestidium, 481
Zestis, 481
Zezera, 505
Zoarchias, 499
Zoarcites, 555
Zonoscion, 472
Zoogoneticus, 500
Zoramia, 562
Zororhombus, 571
Zunasia, 548
Zungaropsis, 531
Zygogaster, 547